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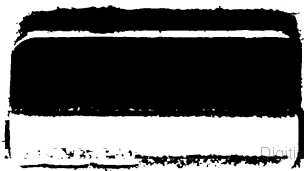
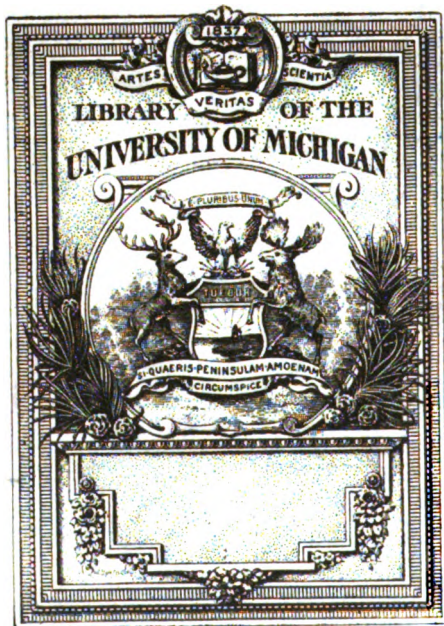
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Manuscript to the Richmond Medical Journal

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ART. I.—*Clinical Lecture on Auscultation of the Heart.* By PROF.
D. H. TUCKER, Medical College of Virginia.

GENTLEMEN: To-day, I propose to explain to you, the physical means of diagnosing valvular diseases of the heart.

The blood, which reaches the *right auricle*, by the *venæ cavæ*, passes through the *right auriculo-ventricular* opening, into the corresponding ventricle. On the contraction of this chamber, it is sent through the *pulmonary* arteries, to the lungs, where it is oxygenised. From the lungs, it passes through the *pulmonary veins*, to the *left auricle* and thence into the *left ventricle*, through the *left auriculo-ventricular* opening. From this cavity, it passes into the *aorta* and is distributed to the system.

During this physiological action, the heart contracts and dilates. Its contraction is called its *systole*, its dilation, its *diastole*. It will be necessary to go farther and examine in what order the *ventricles*, *auricles* and *cardiac valves* perform their peculiar functions.

For all practical purposes, it is sufficiently accurate to state, that the two ventricles contract and dilate together. The same may be said in reference to the auricles; but while the ventricles contract, the auricles dilate and *vice versa*.

In reference to the valves, it may be stated, that when the auricles contract, the auriculo-ventricular valves open, so as to allow the onward current of blood to pass into the dilating ventricles, and, at the same time that the auriculo-ventricular valves are opening, for the purpose indicated, the arterial valves close down, so as to prevent re-

gurgitation of blood, into the dilating ventricles. When this is accomplished, the ventricles, in their turn, contract, closing the auriculo-ventricular valves, so as to prevent regurgitation of blood into the auricles. The blood not being able to pass back into the auricles, the pulmonary and aortic valves are forced open, by the contraction of the ventricles, so as to allow the onward passage of the blood. This combined action of these portions of the heart is constantly renewed, constituting a *beat* of the heart and the order of occurrence, its *natural rhythm*.

Having explained these points, which it is necessary for you to thoroughly comprehend, let us pass to the natural sounds that occur, during this cardiac action.

If the ear be placed over the region of the healthy heart, two distinct sounds will be heard, separated, of course, by spaces of time, which language can scarcely define, but which the accurate ear may easily recognize. The first sound is longer and duller, than the second, and corresponds or is synchronous with the contraction of the ventricles, with the closure of the auriculo-ventricular valves, with the passage of the column of blood, through the open arterial valves, with the pulsation at the wrist, and with the impulse of the heart against the chest. This sound of the heart may be considered due to the various causes just mentioned, since nothing definite has been fixed upon, by authors, in reference to its single or sole cause. This sound being accomplished, an infinitely small space of time elapses, when the second sound is produced; this sound is sharp and quick, and from experiments, is supposed to be due to the closing down of the arterial valves, by which the blood is prevented from regurgitating into the ventricles, and may be considered synchronous with the beginning of the ventricular dilatation. This sound being accomplished, a pause, long in comparison with the one already mentioned, takes place, during which the ventricles become filled, by the cardiac actions already mentioned.

It is absolutely necessary for you to familiarize yourself with these natural sounds of the heart and the time of the heart's action, at which they occur, before you can appreciate those morbid sounds which indicate disease of the valves of the heart. As long as the heart is healthy, nothing will be heard but the healthy sound, separated by the pauses to which I have alluded; so soon, however, as the lining membrane of the heart becomes roughened or the valves lose their pliability, morbid sounds will replace one or the other, or both,

of the natural sounds of the heart. If they occur during the contraction of the ventricles, they will replace the first sound of the heart; on the other hand, if they occur during the dilatation of the ventricles, the second sound will be replaced. Or if the morbid sound is heard, both during contraction and dilatation of the ventricles, both the first and second natural sound will be replaced. As the result of inflammation or rheumatism, or of ossification, &c., the valves become roughened and unable to open and close perfectly, thus interfering with their functions and giving rise to the morbid sounds which we will now proceed to consider.

The morbid sounds are designated either as a bellows-murmur (*bruit de soufflet*;) or as a sawing sound (*bruit de scie*;) or as a rasping sound (*bruit de rape*;) these names merely indicate different degrees of intensity or roughness, and may be regarded as essentially the same sound.

For purposes of classification, the valves may be regarded, as either *constricted* or *dilated*. By *constriction* of a valve, I mean, that the valve opens so imperfectly, as to interfere with the onward current of the circulation, thus producing a morbid sound. By dilatation or insufficiency of the valve, I mean its imperfect closure, so that, either during the contraction or dilatation of the heart, the blood is allowed to regurgitate through some one or other of the valves.

The following table will, upon accurate reflection, enable you to understand, not only the cause of the morbid sound, but by referring to the time of the heart's action, it will enable you (in connection with other points of diagnosis) to determine also the valve which is diseased, and the character of that alteration, viz:—whether the valve be *constricted* or *dilated*; or *both*:

Auriculo—Ventricular Valve.

Constricted.—First sound, healthy; second sound, morbid.

Dilated.—First sound, morbid; second sound healthy.

When the valve is both constricted and dilated, there will be a morbid sound at both sounds of the heart.

Arterial Valve.

Constricted.—First sound, morbid; second sound healthy.

Dilated.—First sound, healthy ; second sound morbid.

When the valve is both constricted and dilated, there will be a morbid sound at both sounds of the heart.

To illustrate:—First. Suppose, either the right or left auriculo-ventricular opening constricted, the morbid sound would occur at the second sound of the heart ; because it is, at that period, that the blood is passing, from the auricle, through a constricted and roughened opening, into the dilating ventricle, at which moment, you will remember that the arterial valve closes to prevent regurgitation. Second. Suppose the auriculo-ventricular valve to be *dilated* or *insufficient*, then the bellows murmur would replace the first sound of the heart ; because, during the contraction of the ventricle, a portion of the blood would regurgitate, through the dilated auriculo-ventricular valve, into the auricle. Third. Suppose the arterial valve to be *constricted* ; a bellows murmur would be heard, at the first sound of the heart ; because, at that time, the ventricle, by its contraction, forces the blood, through the constricted arterial valves. Fourth. Suppose the arterial valve *dilated* or *insufficient*, a bellows-murmur would occur at the second sound of the heart ; because the valve not closing, the column of blood driven into the artery would fall back, into the dilating ventricle.

A valve may be both *insufficient* and *constricted*, at the same time, in which case there will be a bellows-murmur at both sounds of the heart. Again an arterial valve might be *dilated* or *insufficient*, at the same time, in conjunction with auriculo-ventricular *insufficiency*, and in that case you would have a bellows-murmur produced during the first sound of the heart, by insufficiency of the auriculo-ventricular opening, and during the second sound, by the insufficient arterial valve.

Suppose the aortic valve to be constricted, with auriculo-ventricular dilatation, then there would be two bellows-murmurs produced, but only one would be heard, because the two murmurs are produced, at the same sound of the heart.

Now as the heart is a double organ, with its various valves, &c., liable to diseases, capable of producing morbid murmurs, it is easily understood, that we may have almost every variety of combination of these sounds, their number varying with the character and location of these valvular lesions.

All this is understood by reference to the table, I have given, which

will explain every combination of valvular disease, that may exist ; and, by marking closely the time of the heart's action, at which the bellows-murmur occurs, you will be able to ascertain whether the murmur depends upon insufficiency or constriction of one or more of the valves of the heart.

The ingenuity of the skillful auscultator goes farther, in determining the diagnosis ; for example, suppose you have a bellows-murmur, at the first sound of the heart ;—this may be due to either constriction of one of the arterial valves or to dilatation of one of the auriculo-ventricular valves. To determine which it is, the following plan may be adopted :

By an examination of the anatomy of the heart and its position in the chest, you will find that the line of direction of the arterial valves is somewhat above the line of direction of the auriculo-ventricular valves ; the former are at the base of the heart, the latter are towards its apex. Now it is perfectly clear that the nearer the ear is placed to the point at which a sound is produced, the more distinctly that sound will be heard ; therefore, in the case supposed, if the bellows-murmur were heard, with most distinctness, as the ear passed from the base of the heart towards its apex, and reached its acme at the point on the chest, corresponding with the line of the auriculo-ventricular valve, then the bellows-murmur would be referable to auriculo-ventricular disease. On the contrary, if the intensity of the bellows-murmur was greatest at the base of the heart and propagated along the great blood vessels, then the sound would clearly be due to disease of the arterial valves. Any other combination of valvular disease, by a similar mode of investigation may be satisfactorily diagnosticated.

Cardiac auscultation goes farther. By the foregoing modes of investigation, it has been determined, first, whether there be valvular disease ; secondly, whether that disease was due to constriction or dilatation ; and thirdly, whether it be an arterial valve or an auriculo-ventricular valve.

It must be remembered, that the heart is a double organ, and that there are two auriculo-ventricular valves and two arterial valves, and the question arises, whether the diseased valve be on the left side of the heart or on the right. To the ingenuity, I believe, of Laennec, we owe the following approximative mode of determination :

Let me illustrate :—Suppose it has been determined that one or the other of the arterial valves is the seat of disease ; if it be the aortic

valve (which is on the left side of the heart) its intensity will be best heard, over the point of that valve, and as the ear of the auscultator passes from the left side of the thorax to the right, the morbid sound will gradually diminish in intensity, until a point is reached, on the right side of the thorax, at which the ear will cease to hear the morbid sound, produced at the aortic valve, but will hear the healthy sound, produced at the pulmonary valve, leading from the right ventricle.

Suppose, on the contrary, the pulmonary valve was diseased; then finding its greatest intensity over its natural position, the ear of the auscultator, passing from this point towards the left side of the thorax, finds the intensity of the murmur gradually diminishing, until a point is reached, at which this murmur ceases to be heard, and the natural sound, at the aortic valve, is distinguished.

Other combinations may be made and explained on the same principle, and if, perchance, both arterial valves or both auriculo-ventricular valves were similarly diseased, then the ear might be passed either to the right or to the left, or towards the base or apex of the heart, without losing the morbid sound or attaining the point of healthy sound.

Suppose the aortic valve was constricted, giving a bellows-murmur, at the first sound of the heart—its healthy second sound being produced—that, at the same time, the pulmonary valve was dilated, giving rise at that point to a bellows murmur, at the second sound of the heart, its first sound remaining natural. In that case, you would hear two bellows murmurs, one over the aortic valve, corresponding to the first sound of the heart; the other, over the pulmonary valve, corresponding to the second sound of the heart. In passing your ear, from the point of greatest intensity, produced by disease of the aortic valve, towards the right side of the chest, you would hear that morbid sound gradually diminishing, till you heard the healthy first sound produced, at the pulmonary valve, followed by the diseased second sound, due to insufficiency of that valve; and, *vice versa*, hearing, at its point of greatest intensity, the bellows-murmur, at the second sound of the heart, due to dilatation of the pulmonary valve, as you pass your ear to the left side of the chest, you would cease to hear the bellows murmur, at the second sound, but would hear the natural second sound produced at the aortic valve, preceded by a morbid murmur, due to constriction of the aortic valve.

Such is the theory of cardiac auscultation, and while it may not of

itself be capable of positive demonstration in practice, yet, taken in connection with the many rational symptoms of valvular disease, it forms one of the most ingenious and beautiful systems of diagnosis, of which medical science may boast. The industrious auscultator, who comes constantly in connection with cardiac diseases, may almost attain practical perfection, in this means of diagnosis, and it becomes every medical student, by deep reflection upon, and acute examination of, the theory of cardiac auscultation, to comprehend its great and important principles, so that hereafter, when brought into actual relation with cardiac diseases, he may be able to reach that degree of practical knowledge, which will serve to distinguish him in his profession and render him a benefactor to the human family.

ART. II.—*Hip Joint Amputation—Recovery.* By A. M. FAUNT-LEROY, M. D., Staunton, Va.

The following is a faithful transcript of the case, as recorded in the "Case-book," kept by myself, whilst Surgeon in Charge of the General Hospital at Staunton, Va.: Private R. A. V., company "E," 43rd N. C. Regiment Infantry; by occupation a farmer; health, previous to wound, good: Age 37 years: Admitted into Hospital, December 19th, 1864, with an amputation of the right thigh, lower third, performed October 17th, 1864, for a gunshot wound of the knee-joint, received at the battle of Cedar Creek.

The stump, on the 1st of January, 1865, had almost cicatrized, excepting two small apertures, from which a somewhat foetid pus issued; the quantity, in twenty-four hours, amounting to four or five ounces.

February 15, 1865: Daily discharge from the openings had considerably increased in quantity. An exploration with a silver probe, through one opening, revealed the bone which was denuded of the periosteum and much roughened; the other aperture led to a fistulous tract of six or eight inches, somewhat superficial: It was evident that something must be done for the relief of the patient, and I determined to open the face of the stump, with a view to a removal of the diseased bone.

The operation was performed March 11th, 1865, I being assisted by Assistant Surgeons T. W. Glocker and R. K. Carter. An ounce of whiskey was administered to the patient, previous to the inhalation of chloroform. A transverse incision was made over the face of the stump; the exposed end of the bone exhibited an excrescence, which was sawn off; it was then perceived that the bone was encircled by soft porous and brownish bony material; an abortive effort of the periosteum to encase the carious shaft. By the use of the gouge, about six inches of this formation was stripped off, exposing the eroded bone, yet the limits of morbid action had not been reached. The carious condition was evidently peripheral in origin, as the periosteum was found to be in a state of fatty degeneration, whilst the medullary membrane was comparatively healthy. It was determined to proceed with the exploration, until sound bone was reached. With this view, an incision was made, on the outer aspect of the thigh, between the vastus externus muscle and the biceps femoris; this incision was ultimately extended over the trochanter major, on a line with the superior spinous process of the ilium—the disease extended to the head of the bone, requiring its entire removal.

The glenoid cavity was found healthy. In the operation, digital compression was made, over the pubic bone, upon the femoral vessel; the arteries were tied, as they were cut; the superficial and deep femoral vessels were secured by ligation; the flaps were then made, leaving them somewhat longer than is usual, in hip-joint amputations. The patient's loss, in arterial blood, was trifling in amount; the flaps were secured by silver wire sutures and the stump was dry-dressed.

As soon as the patient was restored to consciousness, half an ounce of whiskey was administered every fifteen minutes until reaction became manifest, and warm bricks were applied to the body and extremity. The patient rallied completely, in a few hours, and drank, during the day, nearly a pint of cream, and ate two soft boiled eggs. The whiskey was exhibited every half hour, during the evening, and every hour during the night. At bed time his pulse numbered a hundred and twenty beats. (He stated that normally his pulse is very frequent and quick.)

March 12th, 8 o'clock A. M.—The patient is doing very well; ate three soft boiled eggs for breakfast, and batter cakes, and drank nearly half a pint of cream. Pulse still the same in quickness and

frequency: Whiskey oz. ij. ss. was ordered to be given every hour during the day.

R. Morphiae sulphatis gr. $\frac{1}{4}$; aquæ camphoræ oz. j. ss. M.

S. To be taken at bed time.

March 13th, 5 o'clock P. M.—Patient's condition is the same as on yesterday: Appetite remarkably good; ate during the day seven soft boiled eggs, batter cakes, and drank largely of rich milk. Suppuration having commenced, cold water was directed to be constantly applied to the stump to lessen the amount of pus. Whiskey was continued in same amount, and at like intervals, as on the day previous.

1st. R. Tinc. ferri muriatici, gtts xx.

S. To be taken three times daily.

2nd. R. Pulv. Doveri, grs. x.

Signa. To be taken at bed time.

Whiskey was only to be given in the event of his waking during the night. Suppuration amounted to half a pint during the day.

March 20th, 1865.—Patient still doing well: Pus diminished in quantity and is laudable: Sutures were removed and adhesive strips used to support the flaps and maintain them in apposition. Patient's bowels have been regular, since the operation. His tongue has at no time been furred.

March 26.—The patient had three movements from his bowels to-day, due probably to the fact of his having eaten cabbage, for his dinner, for which he had a craving desire.

R. Plumbi acetatis, grs. ij.; pulv. opii, gr. ss.—ft. in pill one. M.

S. To be taken at bed time.

March 27, 1865. The pill had the desired effect; has had two passages from bowels to-day. The same pill was ordered to be exhibited at bed-time. His stump is doing well. Suppuration has abated, three or four ounces. He is very cheerful.

March 28. Progress of patient still highly favourable. In addition to the iron, the following prescription was exhibited:

R. Olei morrhuae, oz. j. ss.; whiskey, oz. j. M.

S. To be taken one hour after each meal.

March 29. Patient's condition very comfortable and favourable; cod liver oil agrees with his stomach; appetite continues remarkably good; eats seven eggs per day regularly. The stump along the lower

surface seems to have united firmly; on the side, granulations are healthy; pus, discharged, laudable.

March 30. Patient had a movement from his bowels last night and one during the day. Same pill was ordered, during the day, and this evening he is doing well. The patient having thus far escaped hæmorrhage, nervous shock, and exhaustive suppuration, secondary hæmorrhage is yet possible, but, from the location in which the arteries are ligated, I do not deem it probable. The present condition of patient, his vigorous digestive and assimilative powers, offer grounds of happy augury. I think the patient's recovery almost certain, unless he should become the victim of fortuitous circumstances.

April 1st. Patient continues to improve. F. D. Coffee, eggs, beef-steak and rolls—whiskey was ordered three times daily; an ounce in quantity.

April 6th. Same treatment. The following prescription was ordered:

R Olei morrhue oz. iij; acidi-sulph. aromat. min.—lx.; whiskey, oz. iv—M.

S. Table spoonful three times daily, three-quarters of an hour after meals.

April 22d. Same treatment continued. Condition improving and he is rapidly fattening. Discharge of pus about an ounce in twenty-four hours.

April 24th. Same diet and treatment continued. The face of the stump has entirely healed. The outer incision has granulated and new skin is rapidly forming. His final disposition will be hereafter noted.

July 18, 1865. The patient started to-day for his home in North Carolina. He was in the enjoyment of most excellent health, and walked, with facility, about upon his crutches.

Remarks.—The highly favorable progress and result, in this case, I attribute to the following circumstances: 1st. The operation was quite expeditiously performed. 2nd. The mode of performance. 3rd. The small amount of primary hæmorrhage. 4th. The comparatively little shock to the system. Amputation, at the lower third of the thigh, having been performed nearly five months previously, the patient may be said to have parted with his lower limb "*guttatim*." 5th. The suppuration, which has not exceeded, in quantity, the

amount frequently witnessed, after ordinary thigh amputations. This I ascribe to the assiduous application of cold water.

It may not prove uninteresting to subjoin some facts connected with the history of hip-joint amputations.

La Croix D'Orleans performed, in 1748, the first amputation at the hip-joint, which was *unsuccessful*. Pervault first operated *with success* in 1773. The first case reported in England was operated upon by Kerr, of Northampton, in December, 1774, which was *unsuccessful*.

Mr. Syme successfully removed a stump of the thigh, at the articulation, in 1845. Mr. Sands Cox, of Birmingham, performed successfully a hip-joint amputation in the same year. There are only two instances published of this amputation, during the war, coming under my observation: one a secondary operation, performed by Dr. Edward Warren, of North Carolina, which was *unsuccessful*; the other, a successful case, by Surgeon E. Shippen, U. S. A.; it occurred in the person of James Kelby, private, company B, 56th Pennsylvania volunteers, the 29th of April, 1863, near Fredericksburg, for an injury received that day.*

This is a sufficient notice of individual instances, and it will prove more instructive to review the statistics of this operation.

Reported by Stephen Smith, operations 35, mortality 60. per cent.

"	Henry Smith,	"	11	"	27.3	"
"	Legouest,	"	44	"	90.9	"
"	Esmarch,	"	7	"	99.	"
"	Macleod,	"	62	"	91.9	"
"	Cox,	"	84	"	75.	"

Mr. Fergusson, of England, says: "It is difficult to collect the proper statistics of this operation, yet I think I am within the mark, when I make the statement, that one in every three or four, on whom it has been performed, has been saved." Chelius says: "Of the cases hitherto published, this operation has been successful in the ratio of 1 in 2½ cases." Erichsen's statistics exhibit 76 deaths, in 126 amputations at the hip: 47 instances were from injury; of these, 35 proved fatal. In 42 cases, in which it was performed for chronic disease, 24 recovered, and 18 died. In the 12 cases of the Crimean war, all were fatal.

*Two other cases of successful amputation, at the hip-joint, during the late war, have been mentioned to one of the editors, by Dr. J. S. D. Cullen, of Richmond, Va., Medical Director of Gen. Longstreet's Corps, during the late war.

Prognosis: Patients, attenuated from protracted disease, but still free from organic lesion of any vital organ, are the most favorable subjects. When this operation is resorted to, in consequence of severe external injury, in a large healthy man, a fatal result is most likely to follow. Erichsen says, in this connection, that "the mortality from this operation has been much less of late years, than was formerly the case," and South, in commenting upon this declaration, says, "it is true, so far as amputation at the hip-joint for disease, is concerned; but in cases of injury, the procedure is still a highly unsatisfactory one."

The dangers incident to an operation at the hip-joint, are, 1st, hæmorrhage, primary and secondary; 2nd, profuse or exhaustive suppuration; 3rd, nervous shock.

ART. III.—*Extract from a Lecture on "The Theory of Heat," delivered at the Medical College of Virginia, Nov. 15, 1865. By* PROF. J. B. McCaw.

"The great central law by which all the phenomena of heat can be explained, is, that this force ever seeks to produce an equilibrium.

Every form of matter has its own way of receiving heat, yet all alike endeavor to arrive at a common temperature; an effort which, ever continuous, is never successful. One form of matter absorbs much, another reflects or refracts; another radiates, or conducts rapidly, and a plate of rock salt will transmit this force without retaining any portion.

"We have thus presented for our contemplation, the molecules of matter *ever in motion*, acted upon by an omnipresent force, expanding and contracting under the influence of every movement, with a rapidity inconceivably great. It is not strange, then, to find philosophers, from the days of Locke and Bacon to our time, who have regarded the heat force to be the result of the incessant motion going on between particles of matter, and this explanation, developed by the experiments of Rumford and Davy, is now reduced almost to a certainty by the original investigations of Joule, Meyer, Tyndall and Thompson.

"It is a well known fact, that motion will develop heat—thus, the

rubbing of two sticks will produce warmth, or the friction of an axle will end in a fire. We see the admirable experiment of Count Rumford, who boils water around a brass cannon revolving on a borer which penetrates its centre; or the still more perfect example of Sir Humphrey Davy, when, at a temperature below the freezing point, he rapidly dissolves two cylinders of ice by rubbing them together.

“Recent observations conclusively show, that the amount of motion required to produce a given degree of temperature, will itself be developed by the same amount of heat when turned into motion. In other words, the two forces are mutually convertible. Joule, of Manchester, found as a mean of forty closely concordant experiments,* that when water was agitated by a horizontal paddle-wheel revolving by the descent of a known weight, the temperature of 1 lb. of water was raised 1 deg. F. by the expenditure of a force sufficient to raise 772 lbs. to the height of one foot. When iron was rubbed against iron, it averaged a force of about 775 lbs., and the agitation of mercury needed 774 lbs. to produce an elevation of 1 deg. of temperature in 1 lb. of water. The conclusion is thus stated: *772 foot pounds equal to 1 deg. F. of 1 lb. of water.*†

“The little spirit lamp I hold in my hand has within it a dormant power, before which the Genii of the Arabian Tales fade into insignificance. The alcohol it contains, will boil 20 lbs. of water. Let us calculate the force necessary to cause this elevation of temperature, according to Joule’s formula :

“20 lbs. of water raised from 52 deg. to 212 degrees equal to 1 lb. of water raised 3,200 deg., multiplied by 772 equal to 2,470,400 lbs. We have then imprisoned, within this glass globe, a power able to raise two million four hundred thousand pounds one foot from the ground, or, assuming the lifting power of a muscular man at 300 lbs., we here hold at command the concentrated vigor of eight thousand men !”

* Phil. Trans. 1850, p. 61.

† Miller’s Elements, Part I, p. 176, 2d edition.

ART. IV.—*The Relations of the Periosteum to Osteogenesis.* By E. S. GAILLARD, M. D., Richmond, Va., Medical Director and Inspector in the late Confederate Army.

[A portion of this article was published in the Confederate States Medical Journal.]

In the practice and literature of surgery, no fallacy is, apparently, more frequently accepted as truth, than that the periosteum is necessary to osteogenesis; that it is indispensable, for the vitality and reparation of bone.

By many of our most respectable authorities, both in the library and in the lecture room, such doctrine is, however, taught, and we are told, that where bone is deprived of its periosteum, it must die; that in such an event, it is the part of good surgery to anticipate nature in its removal.

It is not unusual, at operating tables, to witness the removal of fragments of bone, which, though stripped of their periosteal investment, have yet their histologic connection, with the medullary structure uninjured; to see the chain saw and bone-pliers applied to the extremities of bone, which had been only denuded of their periosteum.

If it can be demonstrated, that the fragments thus removed would have soon co-operated in re-establishing osseous integrity, and that the ends of bones, so mutilated, would have soon been recovered with periosteum and restored, by nature, to their normal condition, it is evident that much of the surgical interference, now so frequently instituted, would be justly condemned, as injurious and unnecessary.

As in the animal economy "the blood is the life thereof," of course neither the original formation of bone, nor its reparation, can ever occur, without a physiologically complete circulation; if any tissue be deprived of its blood, either by obstruction of the circulation or as the result of violence, it must die.

The death of bone, when denuded of its periosteum, is attributed to this ostensible cause, that bone, for its growth, vitality and reparation, is dependent upon the blood, obtained through the vessels of the periosteum. Is this a physiological truth?

It is of course known to every tyro in anatomy, that the arteries distributed to the bones are usually divided into three classes.

The first class is that which is supplied from the periosteum; these vessels are small in character and indefinite in number, penetrating

the cancellated structure of the bone and inosculating, by their radicles, with the capillaries of the first and second class.

The arteries of the second class penetrate directly, by foramina, the extremities of the long bones; in other bones, they enter, at no common point, but irregularly.

The third class consists of the medullary artery, penetrating, by its proper foramen, near the centre of the bone.

"The arteries of the first two classes are generally extremely small and ramify upon the compact and cellular structure, penetrating it in every direction and anastomose with the radicles of the nutrient (medullary) artery."

It is thus evident, that the radicles of the medullary artery freely anastomose, as well with the capillaries of the arteries penetrating the ends of the bones, as with those of the arteries derived from the periosteum, and that, in the event of denudation of the periosteum, the cancellated structure of the bone is, fully, supplied with blood, from the anastomosis existing between the radicles of the medullary artery and the capillaries of the arteries, penetrating the bones at their ends; or, as may be more clearly and now more briefly stated, the cancellated structure of the bone is, for its vitality and reparation, independent of the supply of blood derived from the arteries of the periosteum.

These facts are known to every careful anatomist; the only subject of uncertainty, being as to the completeness of this capillary inosculation and its supplemental adequacy for sustaining, thoroughly, the vitality of the cancellated structure, when the periosteal vessels have been ruptured. That this anastomosis is entirely sufficient for the objects to be accomplished may now be admitted, as one of the facts and demonstrations of surgery.

Mr. Cooper was of the opinion "that the external and internal periosteum bear strict resemblance to the cellular neurilemma of a nerve, to the membranous covering of the sarcolemma of a muscle and to the parenchyma of the various viscera, each being for the same purpose, that of forming a nidus or basement membrane, for the products eliminated from the blood." He also states, that the importance of the medullary circulation, in the formation of bone, "may be proved by destroying the medullary membrane in the bone of a living animal, when the inflammation which is consequently set up

extends to the EXTERNAL periosteum;" showing, thus, the intimate connection existing, not only between the medullary membrane and the periosteum, but between the medullary membrane and the cancelled structure, which is, of course, the medium of communication.

Attention is called to the fact, that, in the opinion of this great anatomist and surgeon, the medullary membrane is just as much, functionally and physiologically, a periosteum, as that external, investing membrane, which we are in the habit of, exclusively, calling by this name.

It is an important fact, that Flourens, in his experiments with madder, for determining the mode of histologic nutrition, observed that the colouring of the bone was manifest throughout its entire extent, though the colouring matter was first deposited or manifested, immediately under the external periosteum. The results of these experiments only serve to confirm and establish facts, first demonstrated by Hales, Duhamel, John Hunter, Tomes and others. Tomes indeed mentions the interesting fact, that, in the growth of bone, "the sides of the shaft, in particular, acquire greater solidity, by the narrowing of the Haversian canals, within which *the vascular membrane goes on depositing fresh layers of bone, and madder administered, while this process is going on, colors the interior and recently formed laminae, so that, in a cross section, the Haversian apertures appear surrounded with a red ring.*"

It is thus proved, that the deposit of bone, as manifested by the colouring matter indicated, is not exclusively centripetal in action, (showing thus a preponderance of the periosteal circulation,) but that such deposit occurs internally, as well as externally: from the "vessels of the vascular membrane," as well as from the external periosteum. *It is therefore proved, that bone derives its vitality and nutrition, as well from the medullary circulation, as from the vessels of the periosteum, and that it is illogical and unphysiological to assume, because one of the classes of blood vessels, engaged in osteogenesis is injured, that bone may not both be formed and nourished, from that other and co-ordinate class, which remains uninjured.*

Craigil, in his elements of general and pathological anatomy, distinctly states, that, "though the periosteal vessels are the main agents of ossification *originally*, there is reason to believe, that the medullary vessels contribute to its growth and nutrition after it is formed."

Collateral evidence, tending to prove that the periosteal investment is not essential to the production of bone, may be obtained from the phenomena of intra-uterine osteogeny.

Many large and important muscles are, by extensive surfaces, attached directly to the bone, no periosteum intervening and there being no evidence of its ever having intervened or been instrumental in the formation of such portions of these bones. Such facts may be observed, in the attachments of the quadriceps femoris, pectoralis major, deltoid, the latissimus dorsi, glutaei, triceps, gastrocnemii, etc.; also in the attachments of many ligaments; ligamentum patellae, ilio-sacral, interosseous ligaments and the ligamenta subflava.

It is thus evident, that, in intra-uterine life, bone is manifestly formed, where the periosteum does not exist, and that it is independent of the periosteal vessels, for its vitality and growth.

Though the medullary membrane has not been satisfactorily proved to exist in foetal life, it is from the vessels forming subsequently the basis of this membrane, that bone is developed and supported, where the periosteum is absent.

Is bone, in extra-uterine life, equally independent of the periosteum, in the event of injury or violence sustained by this membrane?

In a recent work on histology, it is asserted, "that the question whether plasma, from which the new osseous tissue is developed, is exuded by the periosteum or by other parts, is not as important, as some authors seem to have held. Obviously it makes no difference, whether it be poured out by the vessels of the periosteum alone or not. Whencesoever derived, however, it can be organized into bone, whilst in contact with bone. Hence the importance of leaving all the spiculae of bone as centres of ossification, provided they are not so detached, as to act as foreign bodies."

As satisfactory, as is this evidence, of the independence of bones (in their reparation) in regard to their periosteal investment, the testimony of Dr. Horner is still more complete.

This writer states, that "some physiologists have attempted to give, to the periosteum, the exclusive credit of the formation of callus. This view is erroneous, because experiments show, that even when the periosteum is stripped designedly from the fractured ends of bones, they nevertheless unite and the periosteum is restored, when the callus is formed." This testimony is particularly satisfactory, for it not only proves that bones, denuded of their periosteum, will unite,

independently of their periosteum, but, that the periosteum "is only redeveloped, *after* callus has been formed, and is consequently *not* the *agent of reparation*."

In a lecture, on conservative surgery, delivered at the Royal College of Surgeons, June, 1864, by Mr. William Fergusons, F. R. C. S., F. R. S., professor of Surgery at this College, the following testimony is given. The high position which this gentleman, justly, fills, entitles his opinions to entire respect and confidence: "I believe it to be a common opinion, that when a piece of bone is bare or a joint grates, there is no probability of recovery in the part and that amputation is the proper course. *This, however, is a great error*, for bare bone is covered again, in many instances, and a joint may be still so far restored, that there may be a certain amount of motion in it. Even when bone is dead, nature causes a separation and thus leads the way to its removal, etc."

As facts are, however, by the practical surgeon, more highly esteemed, than opinions and deductions, however plausible, a report of two interesting and illustrative cases is herewith submitted.

The first case occurred at the General Hospital, at Charlottesville, Va., in charge, at the time, of Dr. J. L. Cabell, through whom this report was originally obtained. The patient was immediately treated by Dr. F. L. Bronaugh, in charge of the ward, and subject, throughout the history of the case, to the supervision of Dr. J. S. Davis, in charge, at the time, of the division.

Drs. Cabell and Davis (in connection with Dr. Bronaugh) watched this case with interest and care, and there was, on their part, an entire unanimity, relative to the opinions stated in the report.

The history of the case proves, that, under the most unpromising circumstances, the ends of bone, denuded of periosteum, will unite, and it is, so far as is known, the only case, occurring during the recent war, which clearly illustrates and proves such a fact.

Case A.—"Sergeant W. G. P., company B, South Carolina infantry, Kershaw's brigade, etc., was wounded at the Wilderness, May 6th, 1864, and was received at this hospital, May 12th; age 20; previous health good; by occupation, a farmer. The ball, presumed to be a conical leaden bullet, penetrated the right buttock, four inches posterior to the trochanter major, and, passing obliquely forward and downward, emerged at a point two inches in front and one inch below the trochanter. When admitted, the patient complained of great

pain, was restless, desponding and feverish, with total want of appetite. The decubitus was left lateral, with right hip elevated and thrown forward. The daily arrival of a large number of cases, demanding immediate attention, precluded the possibility of a very careful examination of this case, until the 17th May, at which time the patient was suffering from irritative fever, in an alarming degree. A hard tumor was felt, just below the inferior limits of the trochanter, on the outer aspect of the limb; it was supposed to be due to a displaced and separate fragment of bone. The patient was placed under the influence of chloroform and an incision made over the tumour, when it was ascertained, that it was caused by the abduction (with flexion) of the upper fragment. The wound being explored, with the finger, it was found that there was oblique fracture, without comminution, of the upper part of the shaft, and that the anterior aspect of the upper fragment *was stripped of its periosteum, for two inches, viz: to the point of insertion of the capsular ligament.* *The case was so very unpromising, that the question of the application of Smith's anterior splint, was discussed, more with a view to affording some temporary relief to the sufferer, than with any hope of ultimate success.*

The splint was applied on the 18th instant, and with the effect of giving immediate relief to the patient. The impossibility of overcoming the extreme abduction of the upper fragment, rendered it necessary to place the entire limb, in a line of direction, corresponding with that of the upper fragment. His improvement was marked in a few days. The inflammatory tumefaction underwent a rapid abatement; the fever subsided and the appetite returned. No complication supervened. On the 28th of July a large sequestrum was removed, in several pieces. It represented a scale of bone, from the anterior aspect of the upper fragment, and doubtless corresponded to the denuded portion above referred to. The splint had been removed on the 19th of July. He remained in bed until September 1st, when he made his first experiment by walking, with the aid of crutches. His limb was shortened about two inches."

On making further inquiry in regard to this case, it has been ascertained, that this young man is now independent of his crutches and is in excellent health.

It will be evident, on reading the facts narrated in the next case, that the detachment of the sequestrum of bone in case A, was not

due to a stripping of the periosteum, but to a further action of the violence that caused the original fracture. That the force of the blow was expended, as well upon the cancellated structure, as upon the periosteum; for were the detachment of the sequestrum due alone to a denudation of the periosteum (and not also to violence inflicted upon the bone itself) there would have been, not the separation of a mere lamina of bone, but the injury would have extended through to the medullary structure. The force of this demonstration, however, will be more important, when seeing, as in case B, that after the removal of the periosteum entire, without the infliction of other violence upon the bone, *there was no sequestrum detached, but on the contrary, that the entire periosteal investment was reformed.*

The second case (case B) was kindly sent to me, by Dr. Le Grand Capers, well known in the late Confederate army, as a physician of close observation and uniform efficiency.

Case B.—“This case was one, in which the entire scalp (integuments and pericranium) was forcibly removed, from the frontal protuberance, around over the ears and across the superior semi-circular ridge of the occiput, by that barbarous process, termed “scalping.” The bone, thus denuded, was felt, by the officers in charge and by numerous officers of the garrison, as well as by myself. Over this extensive surface, granulations soon formed, and, in less than four weeks, the entire bones were covered and protected by a thick, fleshy, granulating surface, covering every vestige of bony matter, and *this without either exfoliation or necrosis.* This rapid repair of the periosteal investment is still more remarkable, from the fact, that the patient, a Mexican boy of eighteen years of age, having been left as dead, by the Indians, was alone, sixty miles from the nearest fort, “Phantom Hill,” and was several days in making this journey; the parts, during the interval, being exposed to the sun, night air, and the dust of the road. From these causes, several days intervened, before he received the slightest attention. *The granulations were completely covered with cuticle, by the sixth week, after which he experienced not the slightest inconvenience, from the injury to the scalp: the pericranium having been completely restored and the vitality of the denuded cranial bones not having been, in any respect, impaired.*”

This case is submitted, without any comment whatever. It tells its own story.

The importance of the periosteum is, of course, great, but it is often, if not always, overestimated.

Dr. Toland, of California, first brought to the attention of the profession (in 1854) the fact, that the phalanges of the fingers would be reformed, if the periosteum be preserved. This truth has been demonstrated in regard to other bones, and Dr. Peaslee, in his *Histology*, states, that the maxilla inferior, the costae, the scapula and the clavicle have all been removed, under these conditions. M. Maisonneuve has removed the tibia, with the same result. Heine states that a rudimentary bone has been formed, when the entire periosteum, as well as the bone, has been removed. It must be confessed, however, that this statement is to be regarded, as a tentative appeal to the credulity of the profession.

Since the publication of these cases, showing that entire bones may be reformed, if the periosteum be preserved, the importance of this membrane has been more than ever exaggerated, and the assumption has been, almost unconsciously, made, that, if necessary to the regeneration of an entire bone, it is equally necessary for the reparation of a part of it.

To sum up all that has been stated, in this connection, it is evident, that the prognosis which usually takes place, where bones are denuded of their periosteum, is not justified or warranted by recorded facts; that there is no physiological reason for assuming, that denuded bone will die, but, on the contrary, that it will, usually, be recovered with its periosteum and restored to its normal condition.

If this important truth be recognized, surgical interference, in all cases of denuded bone, will be abandoned, and one step secured in the progress of conservative surgery.

MEDICAL AND SURGICAL RETROSPECT.

1. *On the Ordeal Bean of Calabar; its Action on the Human Body, compared with that of Woorara and Conia.*

The Ordeal Bean of Calabar is a vegetation of the Gold Coast. The natives call the plant *Esere*, and it was by the missionaries named the ordeal bean, in consequence of its being given to persons suspected of witchcraft, with a view of detecting their innocence or guilt. Both in taste and appearance it resembles the common white haricot bean.

In a paper read before the Royal College of Physicians and Surgeons, by Dr. Harley, the author draws the following conclusions :

1. The ordeal bean may cause contraction of the pupil when taken internally, as well as when applied locally, even.
2. That atropine and the Calabar bean are physiologically antagonistic.
3. That the ordeal bean paralyzes the motor nerves, and leaves the intelligence and muscular irritability unimpaired.
4. That it excites the salivary and lachrymal secretions.
5. That it destroys life by paralyzing the nerves supplying the respiratory muscles—being, in fact, a respiratory poison.
6. Although it may weaken the heart, it neither stops the circulation nor arrests the heart's action. It is not, in fact, a cardiac poison.
7. It is closely allied in its effects to woorara and conia, most closely, perhaps, to the latter; but it differs from both in its tendency to produce muscular twitchings, and in its power of producing contraction of the pupil. Neither woorara nor conia exert, generally or locally, any such effect on the iris.
8. The ordeal bean will prove a most valuable addition to the pharmacopœia, by not only giving us a useful myopic, but also a powerful anodyne, capable of soothing nerve irritation without either destroying intelligence or endangering life by arresting the heart's action.

Mr. Solberg Wells was somewhat surprised that, in enumerating the peculiar properties of the Calabar bean, Dr. Harley had not called more attention to its irregular power of causing contraction of the ciliary muscle, and thus affecting the accommodation of the eye, as this was of far greater importance than its action upon the pupil. The impairment of vision which follows the application of atropine is not due to the dilatation of the pupil, but to the paralysis of the accommodation. This is proved by the fact, that if we employ a sufficiently weak solution of atropine, so that the constrictor pupillæ alone, and not the ciliary muscle also, is paralyzed, vision will be but very slightly impaired. Now, the Calabar bean possesses the peculiar power of not only causing contraction of the pupil, but also of the ciliary muscle, thus changing the normal into a short sighted eye. It

also counteracts the paralyzing effects of atropine upon these muscular structures. With respect to the local action of the bean he might remark, that Professor Czermak and he had been trying its effects upon the eyes of rabbits, directly after decapitation, and they had found that it produced marked contraction of the pupil within about twenty minutes of its application.

Mr. Hülke communicated briefly the results of three experiments which had been made, with the alcoholic extract of the bean, on patients in the Royal London Ophthalmic Hospital. The first patient had paralysis of both third (cranial) nerves, and mydriasis from syphilitic periorbitis. Two hours after the application of the extract to the right eye, the nearest point of distinct vision was sixteen and a half inches, and the diameter of the pupil was one line, the proximate point having been previously twenty-six inches, and the pupil two and a half lines broad. In the same time the near point of the left eye had become twelve and a half instead of twenty inches, and the pupil one line instead of three lines across. The second patient had paralysis of the left third cranial nerves, with mydriasis, of four years' standing, the consequence of traumatic periorbitis with abscess. In one hour the proximate point had become six instead of eight and a half inches, and the pupil had contracted from three to three-quarters of a line. In the other unaffected eye the application of the extract effected, in the same time, an alteration of the proximate point from eight and a half to four inches, and reduced the pupil from one and a half to three-quarters of a line. The third was a case of paralysis of the left third cranial nerve, with mydriasis from periorbitis, possibly rheumatic, which had been twice previously cured with iodide of potassium. In an hour the proximate point of distinct vision was brought from ten to five inches, and the pupil changed from three lines to three-quarters of a line in diameter.

According to Mr. Ernest Hart, glycerine is the only proper solvent for the alcoholic extract of the bean, the watery solution undergoing rapid decomposition. The solution in which one minim corresponds to three grains of the bean answers best. It counteracts the effects of a solution of atropia, of three grains to the ounce, in dilating the pupil—inducing recontraction.—*Lancet*.

2. *Clinical Lecture on Gonorrhœa and Imaginary Spermatorrhœa.*
Given at St. Mary's Hospital, June 14th, 1861. By THOMAS K. CHAMBERS, M. D., etc.

The poison of gonorrhœa, as a rule, attaches itself to the urethra alone, and (like all animal poisons on mucous membranes) has a tendency to run a definite course, to exhaust its virulence by the formation of pus, and so to cure itself. I always, therefore, leave these hospital cases quite alone for your instruction; and, if they are recent, you see them get quite well of their own accord; sometimes in four or five days, as happened in the case before us; sometimes after a

longer period ; but always without any unfavorable symptoms. The fact is that gonorrhœa is naturally, in both male and female, a most mild disease, with power to get well in about a fortnight by the simplest treatment, if only it is not made severe by the folly of the patient or his medical attendant. I consider all primary heroic treatment of urethral discharges a most unjustifiable interference with nature.

Doubtless a good many patients are tough enough to bear, without ill consequences, local tampering with urethra ; but very frequently you will have stricture and swelled testicle follow, and every now and then you will have a result which will weigh on your conscience for the rest of your lives. You may have the blood of a fellow creature on your head.

Capable as the urinary mucous membrane is of taking care of itself and getting rid of poisons which are in a manner natural to it, it resents foreign irritants ; and it resents them most particularly when it is not guarded by a purulent coating and is in a healthy state.

Real spermatorrhœa is a most rare, almost unknown disease. If you ask all the physicians and surgeons of prominent standing, the hospital staffs in this metropolis, they will tell you they are doubtful if they ever saw a decided case. But of *imaginary* spermatorrhœa, they have almost daily instances in private practice. Persons whose minds are unhinged with the horrid suggestion are constantly coming before them ; and if the poor creatures will confess to the source of their impression, it may generally be traced to the reading of beastly books or advertisements in the newspapers. You could scarcely imagine how enormous is the circulation of these publications ; under specious titles, they are advertised at the cost of about £20,000 a year, and are sent all over the globe. When traveling with the Prince of Wales two years ago, I found them wherever I found Englishmen ; and a captain in Her Majesty's navy told me he had caught them in the hands of his midshipmen in the Mediterranean.

The nature of the cases under the delusions of these ingenious traps, and presenting themselves to you as spermatorrhœa, are various. There are :

1. A gleet discharge from slight stricture.
2. A similar discharge from pure debility, exactly analogous to leucorrhœa in the female. This is common in the active minded, who use much mental exertion at night, such as students cramming for examination, etc.
3. Incapacity to complete the generative act from mental agitation. This happens to new-married men from modest respect, and to the unmarried from consciousness of sin, and disgust towards the female. The same mental agitation produces simultaneously indigestion and a deposit of lithates in the urine, which is then supposed to be semen.
4. Nocturnal pollutions, arising solely from the habit of over-sleeping ; but rarely affecting the health, except secondarily through the mind.
5. Slight epileptic fits.

6. Simple delusions, grounded on no symptom, but taking this form, on account of the secret publicity given to the gross exaggerations and falsehoods contained in the books I have alluded to.

7. The fallacies which harass these poor people are often the more deeply ingrained by the consciousness of dirty habits in their boyhood, though probably those habits have been long left off, and have never been practiced to the extent of injuring the health. But sometimes you will find patients complaining of "spermatorrhœa," half with the idea of deceiving, and half as a euphemistic way of telling you that they are still addicted to self-pollution.—*Lancet*.

3. *Opium an Antidote to Strychnine.* By J. R. WINTER, M. R. C. V. S.

As strychnine is so commonly used for the poisoning of animals, it frequently happens that our dogs, either from accident or design, get destroyed by this agent. A large dog picked up some strychnine, and showed the usual and unmistakable symptoms of having taken a large and destructive dose—curving of the back, rigid extension of the limbs, &c. In order to save pain, and with a view to kill in an easier way, a good dose of tincture of opium was immediately given. To my surprise and gratification the paroxysms appeared to subside. This encouraged me to give more opium; and in the whole he got about five drachms of the liquid opiate, seemed a little drowsy, was left to sleep, and found in an hour afterwards quite well.

Shortly after this another dog was heard at night knocking himself violently about amongst buckets, boxes, &c. He was secured, and being evidently suffering from the same active poison, I administered the like remedy to him. In this case there was more difficulty to get the animal to swallow the opium; but sufficient was from time to time got down his throat, and after four hours of dreadful suffering he likewise recovered.—*Lancet*.

4. *A Pathognomonic Sign of Scarlatina.* By M. BOUCHUT.

For some years past, Mr. Bouchut has been in the habit of pointing out, in his wards a curious sign which assists in the discrimination of scarlatina from measles, erythema, erysipelas, &c. It consists in a vascular phenomenon, proportionate in intensity to the extreme contractibility of the capillaries; we refer to the enduring *white stripe* produced at will, by drawing the back of the nail over the part of the skin in which the eruption exists. Pressure with the nail, or any other hard substance, upon the exanthematous surface produces a white streak, which lasts one or two minutes, and sometimes more. Figures may thus be traced upon the skin, the lines of which are conspicuous from their whiteness. With a blunt probe or penholder the diagnosis of the disease may be distinctly inscribed on the integument,

and after a minute or two the word *scarlatina* disappears, when the uniform tinge of the eruption again invades the written surface.*

This phenomenon is observable in scarlatina only. The scarlet hue of measles is not uniform, the eruption consisting of mottled patches, with very slight elevations separated by interstices of healthy skin. In measles the procedure we have described would produce an alternately red and white streak, enduring a much shorter time than in scarlatina. In erysipelas, in the redness induced by a mustard poultice, in solar erythema, the white line we allude to is not visible; and without attributing to this sign an undue degree of importance, it may be said to supply one more element in the determination of the characters of the eruption of scarlatina.

Among the young patients in whom this symptom was noted this year, was one in whom scarlatina occasioned a delirium similar to that of meningitis, and who recovered, without any other prescription than mixtures with two ounces of syrup of mulberry. In this case, pressure with the finger left a distinct and lasting white line, especially on the second day of the eruption. The instances which place the fact beyond question may now be numbered by hundreds, and the phenomenon invariably appears when the eruption is complete. It is, moreover, not a little singular that when the exanthema has faded, and the skin has resumed its natural rosy hue, white lines may still be traced by friction with the finger, and last longer than on those parts of the skin to which the eruption did not extend.

M. Bouchut has sought for the cause of this phenomenon. How is it that in a cutaneous eruption, consequent upon universal capillary congestion, sudden and lasting discoloration can be induced by friction? He considers this to be due to a considerable increase of the contractile power of the capillaries, proportionate to the intensity of the disease, the regularity of the eruption, and the amount of vital power. The capillaries contract, and expel their contents, hence the *white stripe of scarlatina*. This excessive tonic contractility of the blood vessels is further remarkable, inasmuch as it is peculiar to this disease; once brought into play by pressure, the vascular contraction seems to last one or two minutes, a circumstance which does not occur in any other morbid condition.—*Journ. of Pract. Med. and Surgery*.

5. *On the Relief of certain forms of Aphonia by Anæsthetic Vapours.* By Dr. FREDERICK D. LENTE, of Cold Springs, New York.

The recent occurrence of a case of this kind, of which the following is a brief abstract, induces Dr. Lente to give publicity to one very similar to it which occurred in his practice a few months ago:

"T. B—, æt. 19, a carman, living in London, was attacked, in the early part of 1860, with hoarseness, enlargement of the sub-maxillary glands and sore-throat. In March he applied at one of the dispensa-

* This sign is described by Borsieri, who does not, however, lay so much stress on its pathognomonic value.

ries for relief, and was treated, but without much benefit; he then applied, in turn, at several other hospitals, including St. Bartholomew's, having, in the mean time, entirely lost his voice.

"In December he applied to the district medical officer, who, on examining the throat, found the left tonsil slightly inflamed, but no other appearance of disease, and could detect no syphilitic taint or history. He, however, noticed considerable rigidity of the muscles of the jaw, and thought it advisable to try the inhalation of *chloroform*. 'He was accordingly placed under its influence, and its effect was truly magical, as he called out for his mother quite distinctly. He went home, and agreeably surprised his friends by speaking to them the first time in *eight months*, articulating every syllable.' A week afterwards his voice had not left him.

"The following is a brief history of my own case:—Miss M. W—, an unmarried female, about forty years of age, has been for the most part bedridden for the last ten or twelve years, apparently from the effects of a violent and protracted attack of dysentery, for which she was treated by another physician. During all this time she has also been more or less troubled with a reducible femoral hernia. She has never been at all hysterical, or even nervous, in the usual acceptation of the term. Some time in the early part of 1860 she lost her voice, so that she could not articulate above a whisper. This was a source of great annoyance to her, as she is very fond of conversation. She was, of course, very solicitous to have something done for her relief; but as I could discern no lesion whatever about the fauces or larynx, and could assign no possible cause for the *aphonia*, I was at a loss what course of treatment to pursue, and so did nothing, comforting her with the hope that she might one day regain her voice as suddenly as she had lost it.

"In December, 1860, her hernia came down, could not be reduced, and became strangulated, resisting all the attempts of Dr. Richardson, who was first called, and of myself subsequently, to reduce it. In our attempts we used the inhalation of sulphuric ether twice each time, the patient, on her recovery, expressing her belief that she articulated with less effort, although she still spoke in whispers. Finally, a resort to the knife became necessary, and she was again brought fully under the influence of the anæsthetic. The operation was protracted from several causes, and she was under the full influence of the ether for nearly two hours. As soon as she had fully recovered from the effects of the anæsthetics, she exclaimed, apparently with the greatest delight, and in quite an audible voice, 'Doctor, I can speak,' and she has been 'speaking' fluently ever since, now nearly three months.

"I always had a suspicion that *hysteria* was at the bottom of this case of *aphonia*; and Dr. Richards, the reporter of the London case, asks, 'May it not be reasonable to conclude that this case was one of mere *hysteria*?'

"It is possible that many chronic forms of throat-difficulty, whether attended or not by *aphonia*, might be benefited, when all other means

fail, as they are apt to do, by the stimulating, anæsthetic, or anti-spasmodic effects of ether or chloroform, which treatment the perusal of these cases may induce others to try."—*American Medical Times*.

6. *A case of Strangulated Oblique Inguinal Hernia, treated by Inverting the Patient.* By Mr. HENRY POWER, Assistant Surgeon to the Westminster Hospital.

CASE.—On the 14th ult., William W— presented himself amongst the out-patients of the Westminster Hospital. He stated that he was forty-four years of age, a soda water maker by trade, and that he had suffered from hernia for twenty years. He had always worn a truss, and though the bowel occasionally slipped down, he had always been able to replace it by himself. On the day previous to his coming, at five o'clock P. M., he was pulling down the sash of a window, when the hernia descended with much force in spite of the truss. He immediately went home and attempted to reduce it, but his efforts were fruitless; he therefore readjusted the truss and went to bed. He endured much pain through the night, and got no sleep. In the morning he felt sick and vomited his breakfast.

On examination a very tense tumour was found in the right inguinal region. It was about equal in size to a guinea fow's egg, and was extremely tender to the touch. I could not ascertain whether the hernia was direct or oblique. He complained of nausea, and of pain radiating over the whole abdomen.

I placed him on his back, with the knees drawn up, and for five minutes endeavored to reduce the hernia by steady pressure, but no impression whatever was made upon it. Recollecting the plan which was rediscovered or reintroduced by my friend Mr. Jessop, of Cheltenham, and of which several successful instances are on record, I obtained the assistance of one or two of the students, and placed the patient on his head. On again gently compressing the tumour, I had the satisfaction of feeling it quickly recede, and in less than a minute it entirely returned, with an audible gurgle.—*Lancet*.

7. *On the Employment of Pressure in the Treatment of Buboes or Enlarged Glands.* By Dr. D. MACPHERSON, Inspector General of Hospitals.

"I may state," writes Dr. Macpherson, in a recent report on the establishment at Singapore, "that Assistant Surgeon J. Cowpar is in the habit of treating successfully, hard, indurated, enlarged glands in the groin, by the application of a truss, two to four hours, daily. During the past year he had sixteen Europeans under him for this usually very tedious and troublesome ailment, the truss was kept applied twice daily for two to four hours at a time, and all terminated successfully. In some cases the bubo disappeared under four days.

But the average period required, to cause absorption of the gland, was nine days. I have some experience in the successful application of direct pressure by weights to buboes, but that adopted by Mr. Cowpar is more under control ; his treatment is so simple and efficacious, I would suggest that it may be made generally known ; I have not met with it before.”—*Madras Quarterly Journal of Medical Science*, January, 1861.

8. *On the Treatment of Prolapsus of the Rectum by Hypodermic Injection of Strychnia.* By M. FOUCHER.

CASE.—A little girl, æt. 4 years, an inmate of the Foundling Hospital at Paris (where M. Foucher was in attendance in place of M. Giraldes), who had been subject for several months to prolapsus of the mucous membrane of the rectum. The procidence returned after every motion, and if more than a quarter of an hour was suffered to elapse before it was reduced, the mucous membrane pressed by the sphincter became turgid, assumed a crimson hue, and could not be returned into the intestine but by violent effort, and with much pain. M. Foucher inserted, agreeably to Wood's method, the canula of one of Pravaz's syringes in the direction of the sphincter, at about one-third of an inch beyond the anus ; he then injected ten drops of a solution containing three grains of sulphate of strychnia in five drachms of distilled water. In the course of the day, the child felt no uncommon sensation. She ate and played as usual ; and in three motions the mucous membrane extruded but once. On the following day no prolapsus occurred ; and on the third day the procidence took place once only. Twenty-four hours after M. Foucher again injected fourteen drops of the solution of sulphate of strychnia, and from that time, during the six weeks the child remained in the ward, the symptom did not recur. Later, under the influence of chicken-pox, the prolapsus reappeared, but from the time the eruptive affection subsided, no further procidence was observed, and after three months' supervision the little patient was sent into the country, no apprehension of a return of the infirmity being entertained.—*Rev. de Ther. and Journ. de Med. et Chir. Pratique*, August, 1860.

ECLECTIC DEPARTMENT.

- I. *A Course of Lectures on the Progress of Surgery during the Present Century.* Delivered at the Royal College of Surgeons of England, in June, 1865. By WILLIAM FERGUSON, F. R. C. S., F. R. S. Surgeon to King's College Hospital, Professor of Surgery in the Royal College of Surgeons and Surgeon Extraordinary to H. M. the Queen.

LECTURE I.—ON MINOR SURGERY.

MR. PRESIDENT AND GENTLEMEN :—Again I have the honor of addressing you as your Professor of Human Anatomy and Surgery. On a similar occasion last year, when I began the duties of this chair, I referred to the difficulty of selecting subjects wherewith to attract the attention of such an audience as might naturally be expected within these walls. I cannot say that time and experience have lessened the diffidence I then felt. As knowledge has increased during my professional experience I have become more and more sensible of the magnitude of the task which the surgeon undertakes who ventures, besides engaging in practice, to assume the duties of a teacher. As in many other departments of life, knowledge with us, when wisely used, tends largely to demonstrate our comparative ignorance; and my own brief experience in this chair, has impressed me more forcibly than ever with the responsibilities pertaining to such an office. Whatever the amount of individual knowledge, it falls so far short of that possessed by numbers, that he who aspires to stand, even if only a step higher on the ladder than many of those around him, must needs be careful how he holds himself in his exalted position.

These remarks follow naturally from my experience of last year. Feeling at that time that I had little to say different from that already familiarly known in surgery, I am now aware that my resources are diminished to the extent of my last course of lectures. The field of my own knowledge is thus far exhausted, and now I have to see in what way I can best fulfil my duties this season, both to your satisfaction and my own.

During the preparation of my lectures for last year I was pressed to give a name to their scope, and perceiving that in detailing part of my own personal experience, I was dealing somewhat largely with that of others, who were my contemporaries, or had immediately preceded me, I ventured to announce that my lectures would be "*On the Progress of Surgery during the Present Century.*" It was perhaps a presumptuous title; but I could see none better at the time, nor even now can I think of one more appropriate. I felt that I was dealing

with my own life in surgery. I could not refer to my own labors, such as they had been, without referring to those of others. A variety of circumstances, many possibly fortuitous, had given me a prominent place in my profession—need I say more than that I had been selected your Professor of Surgery?—and I thought it better, instead of saying “the life and times” of your humble servant, to say that my lectures would be on the progress of surgery during a period in which I had dealt largely with it myself.

Every one has his own view as to how such a theme should be treated. I thought I had guarded myself sufficiently in my introductory lecture, by stating that I should select only such subjects as those in which I had been specially interested, on which I fancied I could speak with some authority. I neither felt willing nor even competent to take up all departments in surgery; and, above all, I was more anxious to refer chiefly to my own personal experience, than to give a reiteration of what had been already said and published by others. Instead of working a subject to exhaustion, I preferred touching the salient points, particularly those which my humble judgment led me to suppose might be of greatest interest to an assembly of men already familiar with the ordinary aspect of surgery.

The details of the progress of surgery in the nineteenth century are not to be worked out in such lectures as these. In number and minuteness they would pall upon the audience; and even as a professor writes or speaks, things are going on or transpiring around which show the difficulty of keeping pace with the onward progress of our profession. John Bell denied the possibility of stemming by external pressure the flow of blood through the common femoral artery; yet how time has altered the *dictum* of that great genius in surgery! To say nothing more at present regarding the efficacy of pressure in a variety of ways and places, it is worthy of passing remark that in modern days, the possibility of usefully compressing the abdominal aorta has been recognized. Professor Lister, of Glasgow, has signalized himself in this respect, so that Professor Syme was enabled to cut into a great aneurism in the pelvis and apply ligatures to the main vessel with the most happy results; and that within the last twelve months we have become familiar with the fact that iliac aneurism has been cured by compressing the aorta. We are indebted to Dr. Heath, of Newcastle, and Dr. Mapother, of Dublin, for these remarkable cases; to Dr. Murray, also of Newcastle, we owe this idea, besides the demonstration that actually aneurism of the abdominal aorta itself may be cured in a like manner.* Even the recent combination of anæsthesia and pressure in such cases is a vast stride in modern progress. Nor can I omit allusion to the great fact that within the same period a successful case of ligature of the innominata has occurred in the hands of Dr. Rogers, of New Orleans—another surgical triumph of our trans-Atlantic brethren, and a living tribute, in a double sense, to Valentine Mott, who first had the courage to resort

* See Medico-Chirurgical Transactions, vol. xlvii., 1864; and Medical Times and Gazette, 15th April, 1865.

to that bold proceeding,* and who was happily spared to advanced years to hear of the realization of his grand conception.

Certain omissions last year, which resulted from necessity, have in some degree been made good by the kind interest of those who honored my lectures with their criticisms, and others I may possibly compensate for in future. In justice to myself and those who shall follow me in this chair, I think it right to state what I consider a great difficulty associated with these lectures. Six are expected, and each must be in itself, as it were, complete. One may be a sequence of its predecessor; the whole may pertain to a single object; but each must have a beginning, a middle, and a well-rounded finish, else woe to the unlucky professor. Now, at first sight, it may not appear difficult to effect all this; but here is the rub—the audience are almost as stringent as *Portia* with the Jew's proposed pound of flesh. The "bond" is for a sixty minutes' lecture. If, in taking execution, the professor falls short of or exceeds the stipulated hour, he well-nigh incurs penalties little less than those which encompassed the unhappy *Shylock*! I confess that I have had more trouble on this score than with most others; but, like that implacable old man, I have been somewhat indebted to the leniency of the court when I have infringed upon the strict letter of my "bond." I find no fault with this custom; on the contrary, I think it good, although I may still have to trust to your indulgence to spare me a few extra minutes; for with the subjects we treat of here it is indeed difficult to hit off, to the satisfaction of all, everything, and yet not fill more than the rotundity of sixty minutes of time.

But now to the proper business of the day! Leaving for the time such grand themes as aneurism and great arteries; professing for the day to say little or nothing regarding what has fancifully been called "capital" surgery, I propose to be so bold as to read to you a lecture on some matters in "Minor Surgery," as the phrase goes. "What!" I suppose some of you may mentally exclaim "more about little matters after all that was said last year regarding split lips and split palates, and lithotomy for little stones in little children!" Even so, gentlemen. I am of opinion that little things constitute the bulk of surgery. Mr. Abernethy did not think it beneath his dignity to describe the making of a linseed-meal poultice; Sir Benjamin Brodie wrote upon corns and bunions; and I know first-rate physicians who delight in giving instructions for getting up the best beef tea for their patients. An ingrowing eyelash may destroy vision; a margin of toenail may cause lameness as effectually as a gunshot wound in the thigh; and what is "minor" in one man's estimation may really appear great in another's. Intrinsic value is that by which estimates are mostly formed. Were we to look to this style of estimate here, we should find that one of the smallest of surgical operations has been most largely remunerated. We all know how varied the payment has been in regard to the little operation of vaccination. Its

* The Pacific Medical and Surgical Journal, vol. vii., 1864.

price has run from *nil* to £10,000 and a title. But *nil* has a large account in the Bank of Science, and it is of vast importance that the work should be as well done as if filthy lucre were the only reward. Parish doctors, poor-law surgeons, even those in public hospitals, deal largely with this fancy bank ; and it is the glory of our profession, that the pauper, whose case we undertake, commands our sympathy and calls forth our skill as much as might the wealthiest citizen.

For my own part, I cannot recognize the true practice of surgery without a due appreciation of so-called minor matters ; and, professing as I do to be more or less conversant with surgery in its minor details, as well as in its bolder and truly rugged aspects, I think it not at all inconsistent with my position here to say something of comparatively gentle surgery, particularly as a contrast with the huge and coarse operations of amputation in the thigh and excision of the knee, of which I treated in the lectures I last delivered in this theatre.

The simplicity of dressing a wound, of dealing with an open surface or sore—which I alluded to in my last course as being characteristic of modern surgery—may be viewed in various lights and aspects. The simplicity of the application and the simplicity of manipulation both deserve notice, particularly as each in perfect surgery is regulated by a due appreciation of nature's powers and of the influence of time. Never, I believe, in the history of surgery was there less faith in applications to wounds and sores than at present. Our trust now is chiefly in nature ; and unless there be a regulating power from within, we know that we can do but little either to restrain or excite. The efficacy of our simplest applications may often be questionable ; and those which stimulate I feel certain often do more harm than good. Nothing, I fancy, can be simpler than lint and water. What can be less irritating than lard or simple cerate ? Even these are set aside by some of our ablest practitioners, such as Dr. Humphry, of Cambridge ; and literally nothing is applied to some of the largest wounds we have to deal with. To be sure, in accordance with custom in this country, the surfaces are held together by stitches until nature effects the permanent union ; but in such an instance these are only mechanical aids ; they are like the splints with which we keep steady the fragments of a broken bone. The contrast between heaps of dressings on a stump of the thigh and nothing at all is certainly remarkable. All that some aim at is merely to keep surfaces in contact, and from molestation—even from the weight of bedclothes. In as far as actual union is concerned, this is perhaps the best and most philosophical view to take. Yet evil may actually arise from such excess of simplicity. It is hardly possible to guard against external influences, either from around, or from the incautious or irregular movements of the patient. Hence, in many instances, such a style of dressing, with straps or bandages, or both combined, as shall give most security against such evil influences, must be allowed to be the wisest course. Yet again I say that these are only mechanical appliances ; but where they are accurately adapted, their utility is beyond doubt. If an ointment is used in such a case, it cannot possi-

bly be of any service, except to facilitate the removal of outside coverings. I here refer to ointment as being one of the simplest applications; and whatever virtue may be claimed for any special compound of the kind, its influence cannot extend far. Water must have a more extended sphere of action; for if prevented from evaporating, and regularly applied, all around must be kept more or less moist.—The temperature of a considerable substance of tissues may be materially modified by water. Wet cloths, if applied only at a first or single dressing, I count as nothing in what I am now referring to; but if cold water be frequently renewed without special covering, or if evaporation be prevented by oiled silk, the temperature may be kept considerably below the natural standard, or possibly somewhat above; although on these points I do not think that we have much precise knowledge. Notwithstanding some assertions to the contrary, I believe that most of us have the impression that whilst adhesion of a wound is being effected, there is present what Hunter called “the adhesive inflammation;” but I am not aware that it has ever been demonstrated that a slight fall or rise in temperature has much, if any, influence on that process.

I refer to this subject at present chiefly to question the supposed beneficial influence of even so mild an application as water, or of simple ointment, in regard to the process of adhesion. If only this process be aimed at, I believe them to be utterly useless. They have no healing influence whatever!

But in the majority of wounds, even when we talk of adhesion having taken place, some points here and there do not unite; and these must then do so by the more tardy processes of suppuration and granulation. If ligatures have been used to arrest hæmorrhage, and the ends are left out, suppuration and granulation must of necessity occur. And here, I believe, complicated and compounded dressings are equally useless. Ointments, even the most simple, are, in my opinion, of value only as permitting the more ready removal of soiled dressings; but water, in such cases, I consider of singular worth. If moderately cold, it *may* keep down temperature—*possibly* prevent accumulation of blood in the inflamed parts, and in both ways, or by some other influence on the nervous system, give at least comfort to the patient’s feelings. I believe the theory a sound one, that moisture and warmth tend to promote suppuration; and when this process is once fairly established, the patient generally has considerable relief, both from local distress and general fever. The old-fashioned poultice has been largely displaced to make way for the more elegant dressing of wet lint covered with oiled silk, or for the “spongio-piline,” which serves similar purposes. In my daily experience I am often asked if water used thus should be hot or cold. I answer that it is of little or no consequence, as in either case the water will speedily acquire the temperature of the surface on which it is placed.

But it is with palpable open surfaces that there is the greatest variety of dressings, and perhaps variety of opinion as to the specific

agency of compounded dressings. For a simple excoriation or abrasion not larger than a pin's head, to those enormous, damaged surfaces from scalds or burns which may cover half the body or more, there have been compositions recommended which I have neither time nor inclination to enumerate. All have been vaunted; all men of experience have seen most of them tried. Patients have died during, though not from, their application; and surfaces have been healed under all such varied agencies. Fluids have been used, from the blandest—say thin water-gruel—to solutions of various irritating, even caustic salts, or to spirit of wine or of turpentine. Powders, from simple flour to that of carbonate of lime, oxide of zinc or of resin, have had their advocates. Oils, from sweet oil up to turpentine, have been extolled; and an envelopment of cotton wool has been, in certain instances, considered all-powerful.

Here it appears as if our resources for good were unlimited. With so many applications for open surfaces, each having been extolled in its time as beyond all others in utility, does it not appear as if we possessed the most precise power wherewith to heal as it were at command? Yet how often do we see the highest skill seemingly baffled! And does it not appear evident that the man of experience is generally indifferent as to which application is used for a time? The reason of this I believe, is, that when out of scholastic bounds and reasoning for himself, he is not impressed with confidence in those specific virtues for which certain applications have been extolled. For my own part, I have long come to the conclusion that many of those agents are positively injurious, and that when healing actually takes place under their use, it is in despite. There is a power within the body itself which works for good irrespective of such injurious appliances. No doubt, in some instances, a gentle stimulant in the shape of lotion or ointment, does good; but in the majority, if nature be left to herself, she will effect cicatrization in proper time—a time over the duration of which we have but little control. From what I now say, it might appear that we have actually no power or influence in the management of such cases. But I am far from implying this: on the contrary, the utmost skill may be displayed, the highest success achieved.

A horse may be on his legs for months without seeming to suffer any way; but man cannot sustain the erect posture beyond a brief period. His nervous and muscular system needs rest, and above all, the vascular system requires such changes of position as shall contribute to its integrity. The upright tubes, arteries and veins, between the heart and feet, require rest at brief intervals, that the strain upon their tissues by the ever-flowing streams of blood may be relieved; and if there be neglect regarding this, loss of tone, to say the least, must be the result; and when tube tissues suffer—I mean the substance of vessels themselves—other tissues suffer in proportion, and this is especially marked in the cellular tissue and skin of the lower limbs. Such loss of tone, loss of vigor, loss of health, occur more readily in some frames than in others; but the strongest—that is,

where the relative vigor of tissues is perfect—must suffer, and hence the frequency of open sores on the skin in the lower extremities of men who are much afoot, and in particular in those who have already had inflammation or a disordered state of the circulation in the lower limbs. Now, it is here that skill and knowledge tell with such marked effect. Doubtless man's ordinary instinct would, in most instances, be of service here. If he had it in his power he would lie instead of stand; but whilst seeing the good effect, he might not be able to give that physiological reason for it which we so readily appreciate. Now, so great is the loss of tone in many cases that even the horizontal position will not rapidly restore the just equilibrium. The blood vessels, particularly the veins, have so lost their normal elasticity that they do not act as in perfect health. A little gentle pressure with a roller round the limb, say from foot to knee, will, in the majority of such cases, prove of essential service in giving that support against the ever-acting force of the heart and blood which, for the time, makes up for the loss of tone which I have supposed. Here rest, attitude and support, enjoined on scientific principles, and with due regard to the health of the system otherwise and elsewhere, are agencies which we have largely at our control, and which the practitioner uses in accordance with his acquired skill—a skill which, in some individuals, seems enhanced by what may be called instinct.

To struggle with nature successfully implies well-nigh the highest scope of surgical power, but it is equally creditable to aid her: and whilst we all aim at doing so to the best of our knowledge, and as we have been taught by rule, my experience leads me to say that we often err greatly. I mean it as no disparagement to young practitioners when I say that possibly they are most to blame in this respect. I attribute this, however, chiefly to their education. In lectures and professional books the same thing is told over and over again, generation after generation. Many lecturers and authors deem it a sort of heresy if they omit stating what their predecessors have said or done, particularly if a good sounding name can be introduced. Much has been said in error and enthusiasm by those who have gone before us; just as much is said and done in the present day under similar influences. It is human nature that such should be. Yet it is unfortunate that those in foremost places should think so little for themselves, and be content with retailing at second hand that which a little reflection, founded on experience, would speedily show to be faulty. Statements which have got into books—into print—imply a great deal in the estimation of some: and these, though perhaps founded in error and hurry, have been transferred from one to another until lecturers and authors have considered them so stereotyped that they have become afraid to omit them lest they should be charged with ignorance. Bold thinkers are largely required in our profession, even though in their work, whilst clearing chaos and upsetting palpable errors, they may themselves produce some mystification. One original thought or fact is worth a thousand stereotyped fallacies.

Here I shall venture on delicate ground, and call attention to the

present therapeutic character and use of mercury. Have diseases so changed that this powerful drug and poison is no longer required?—Granting some such changes, is it not the impression of the middle-aged and the rising that the virtues of this medicine have been greatly overrated, and that in a large proportion of cases its use can be entirely dispensed with? Has there not been some error, some fallacy, here, which thoughtful men in modern times have well-nigh set aside?

Let me give a surgical illustration, which I shall draw from my own experience, and for which I shall take the responsibility. I believe I am right in stating that the opinion is almost universal that children are peculiarly liable to convulsions after operations. In one of my lectures last year in this theatre, I referred to considerable personal experience with such subjects, and in departments in surgery besides those spoken of, I feel entitled to say that I have performed probably as many operations as most of my contemporaries, yet throughout my life I have not seen a single instance of convulsions produced by operations. There is scarcely a surgical book in which the subject is not referred to, and the high authority of Sir Astley Cooper is often quoted in corroboration. Now, I do not doubt that Sir Astley may have seen such a result; but I have no hesitation in stating that the occurrence is so rare that, instead of forming the ideal rule, it should be held as the exception. One, or several examples of this kind occurring in a life-long experience, should have no more influence on the general question than if we endeavored to demonstrate that because every now and then men are found dead in bed in the morning; the death of all must be the same.

The loss of confidence in much-vaunted remedies seems, in some respects, like a loss or diminution in our appliances—an abstraction from our powers, as it were. But in my opinion the correct view to take here is, that we are acquiring a knowledge of our own ignorance—that we are beginning to see that we have placed our faith erroneously. In short, that we have been taking honor to ourselves for that which has been justly due to nature. We begin to see the difference between blind empiricism and natural processes.

An astringent lotion—say a solution in water of sulphate of zinc, two or three grains to the ounce—is by most of us deemed well-nigh specific; and so it in a manner seems to be when a sore is rapidly approaching the last stage of healing. The same may be said of various solutions and ointments. Yet dare one of us affirm that had water only, or dry lint only, been applied, or had nothing been used, the sore would have been an hour later in healing? Yet so strong is faith in these applications that the practitioner just emerged from the schools is apt to take what he thinks will be the most rapid course, and so astringents are resorted to at once, and thus a raw surface is so teased and irritated that nature takes twice the time to do her work of repair. A sore which, if let alone, or covered by some simple only, would have healed in a few days or weeks, may be so fretted as to endure for months. It must have frequently fallen to the lot of seniors to be consulted by patients and practitioners about

sores which seem to have baffled all skill and every sort of application; and when the advice has been given to apply simple water—a bit of wetted lint—to do, as it were, nothing at all—the sore has rapidly healed. I know of no stronger test of confidence in my own humble skill which I ever incur with those who consult me than when, visit after visit, with reference to slow-healing sores, I say, “Go on with wet lint, if you please!” Yet I fancy it is the right course both for the patient and for surgery. Occasionally some, under the impression that nothing is being done, will cling to the mysterious-looking black or yellow lotion—to the so-called specific alterative; even a month of slow poisoning with mercury may be preferred to the *laissez faire* system; but the generality of patients are satisfied with a reasonable explanation.

I am here, however, on the borders, as it were, between physic and surgery; and as the latter is emphatically my theme, let me take some illustrations which belong more positively to that department.

From what I have stated it may be inferred, and with justice, that I object to much interference with nature's ways so long as they appear to bear in a satisfactory direction; yet there are many instances in which non-interference equally displays the absence of good surgery. Thus to leave a foreign substance in a wound, when it can be extracted or removed with less risk than is involved by its presence, may be considered bad surgery. Injudicious interference is to be reprobated; but when a wise application of surgery effects the removal of a decided evil, the act, is one of good practice. Let us take an instance of very common occurrence—where a bit of dead bone lies in the body within reach of the surgeon, not only dead, but actually separated from the living tissue. This may be a case where fragments of bone have been deprived of life by an injury, or where disease has killed the part. So perfect are nature's ways in some such cases that she moves the dead part until it literally falls from the rest of the body, or is thrown off its original axis and thrust lengthwise through a narrow track. I have seen a sequestrum of the whole thickness of the femur turned nearly at right angles to the original line of the bone, so far pushed from the thigh, too, that the surgeon had only to take hold of the projection with his hand, and pull it away by force scarcely more than sufficient to lift its weight. But it is a great error in surgery to suppose that nature will always do her work in this way. Often she seems helpless for further work than mere isolation; actually she may speedily envelope the dead bit of bone in such a way that even the mechanical powers of the surgeon may fail to accomplish extraction of the offending part. Now I greatly fear that it is a common error to rely too much upon Nature in many such cases. What with soft tissues, possibly with hard, even with isolated parts, it may be fairly hemmed in, and, unless interfered with, may lodge a lifetime, and be all the while a most offensive and distressing occupant. It is in some such cases that we see great triumphs in our art, the triumph being enhanced by a display of science and skill which only the instructed can perfectly understand.

The engineer's or miner's work of sinking a shaft or a counter-shaft is not more scientific than an exploration in pursuit of fluid and extraneous material ; and in my opinion there are few things in practical surgery more striking than the sight of the surgeon extracting dead bone through a track where matter only had flowed before ; and still more so when he cuts at a considerable distance from the apparent seat of disease through seemingly healthy tissues, and removes a portion of dead bone, a bullet, or other inanimate material, which may have been the cause of suffering for months or years. The counter-opening of the surgeon is generally a scientific proceeding, and one which often displays consummate skill. Now I believe that there is often needless delay in extracting dead bone. After separation is complete it should be forthwith removed. No good can possibly result from delay, but much harm may ; for besides prolonging a source of exhaustion, there will in certain instances be such a formation of new bone that the mechanical powers of the surgeon may fail to make way through it. Notwithstanding the palpable nature of many such cases, I have often been astonished at the seeming want of judgment and skill on the part of the surgeon. Internal remedies and external appliances have been fruitlessly used—improperly used I may say, for all that was required was a simple application of the surgeon's hand, with suitable instrument wherewith to remove or extract the offending part. Not long ago I saw an instance of necrosis of the clavicle about midway between its extremities, resulting from erysipelas and abscess. The patient had been brought from a distant country for assistance. The original inflammation had long since ceased, and there was only a small opening or sore over the dead piece of clavicle. Now in this case the practitioner in charge had latterly trusted entirely to the supposed efficacy of a plaster of a waxy and resinous composition. So thickly was it laid on (spread upon leather, and made to cover the clavicle, part of the arm and scapula) that some considerable time was required, with a free use of turpentine, to clear all away, so that the parts could be properly examined. It was then readily perceived that the only mischief remaining was a small bit of dead bone, which was almost as easily removed as lifting it from a table. The villainous plaster was discarded, water dressing was applied, and in a fortnight only a scar remained. This was a sad illustration of misplaced faith, whether in plaster, nature, or both. My impression on seeing the dressing was that most reliance had been put in the plaster, otherwise one more than a foot square in extent would not have been used to a disease whose probable surface might have been covered by the point of a finger.

If these really are minor things in surgery, it would be well that more attention were paid to them. But, in reality, I often doubt if it be wise to sanction the use of the term "minor" at all. It implies a seeming division of surgery into two departments : as if they could not, or should not, be practiced by all alike. It shows as if the worker in minor surgery was incompetent for the major ; and again, it makes it appear as if the performer in great things had no room in his mind

for little matters—a species of affectation by no means to be admired. I have seen a great surgeon amputate a limb with a few movements of his arms and hands, and then stand aloof to let his assistants secure the bleeding vessels and close the wound. I have often thought that there was something equivocal in thus stopping short in the operation,—as if to show a contrast as regards precision and rapidity between himself and his assistants ; and for my part, I have always found these “minor” affairs the most tedious, and often the most difficult, part of such an operation. I once heard a hospital surgeon say that he should like just to hold the position of being called to perform operations without having to deal with the cases either before or after. Nothing could, in my mind, convey a worse conception either of the true character of surgery or of the duties of a surgeon. There can be no greatness in surgery when details are overlooked. A character for niceness in details alone will not make up the full measure of that of a great surgeon ; neither will great deeds—that is, operations. There must be a combination to give perfection ; and my impression is that he who can master major surgery, so to call it, will be likely to be most efficient in minor. I must say, however, that I have often seen a carelessness about minor things with hospital surgeons—who, from their connection with such institutions, usually constitute the great ones of the day—which has seemed to me to injure the character of surgery. Even in capital surgery, as the phrase occasionally goes, there is a necessity to look into details ; for what could appear worse than to see a flap, in amputation of the lower limb, completed before it was discovered that there was not a saw in the apartment ? This is no fancy picture ; for I have actually seen it. This implies a want of thought and care such as might be expected from a person who would transfix and cut upwards in making flaps in amputation : a deed which I have also actually witnessed, although happily only on the dead body.

How common it is for small tumours to be taken to men avowedly of small repute ! Yet must we not all admit that in general it is much easier to take out large tumours than small ones, as there is a niceness of manipulation in the removal of small growths which is not needed in the others ; and this nicety in reality constitutes a more difficult operation—tries the temper and skill of the surgeon much more than the other.

However small the interference on the part of the surgeon, it should be effected with consideration and care. Operations for hæmorrhoids and partial prolapsus are generally reckoned amongst the minor, and in consequence are, I believe, often very indifferently effected. In a short time the patient is as bad as ever, and remains so until something different from “minor surgery” is applied. Operations for nævi, for small vascular tumours, pass amongst the proceedings for minor surgery ; yet how often vigorous treatment is required in such after some “minor” piddling. There is an old adage that “fools should not play with edged tools ;” but there are more dangers in surgery than from cutting instruments. I have known both forearm

and leg lost by too tight bandaging for simple fracture, and I have seen a young lady's face disfigured for life by the reckless, careless use of nitric acid to destroy a nævus on the lower eyelid. It was applied so lavishly that it ran to the cheek, and did irreparable mischief.

From year to year as I occasionally meet such tumours of the mamma as this (pointing to a chart), which weighed nineteen pounds when I removed it; or like this (pointing to a chart);—some monster form of disease, of which you see so many specimens around (pointing to casts and drawings), which has been permitted to assume that condition by the obstinacy of the person, possibly by a persistence in dealing with charlatans, possibly maltreatment by surgery, I fancy that I have seen the last instance of this kind; but again and again one observes repetitions of the same, and we may say in surgery, as with the poor, that bad cases will never cease out of the land. Yet withal I have a strong impression that surgery makes progress in respect of these cases, and that diseases which, if left, through ignorance or improper treatment, to run their course, and assume the monster aspect referred to, are in reality checked in early development by an improved skill in surgery, founded on scientific and practical data, which result from increasing age and experience. Here are two examples illustrative of these views. In this instance (pointing to a chart), through folly and charlatanry, the patient's life was in a manner sacrificed: even amputation was of no avail. But here (pointing to a chart), by taking a disease of a somewhat similar kind in a much earlier stage,—although the tumour (of a fibroid kind) originated in the soleus—both limb and life were saved by early local removal.

Two-thirds of a century have increased our resources in such matters, and among modern improvements for disseminating knowledge, there is none greater, in my estimation, than that practical style of public teaching which is an essential feature in every well conducted general hospital of the present day. Private operations in large public hospitals are now in a manner eschewed: personal friends and apprentices are not now solely the on-lookers; the days of "hole-and-corner surgery," to use the term of the greatest medical reformer of modern times, have passed away; practice in wards and theatres is now so patent to all, that it behooves the best of us to look to such laurels as we may chance to have, and to see and show that "minor surgery" requires and deserves as much skill and attention, as even the best among us can bestow upon it.—*London Lancet*.

2. *Mydriasis and Paralysis of Accommodation Permanently Cured by the Use of Calabar Bean.* By P. D. KEYSER, M. D., Surgeon to the Philadelphia Ophthalmic Dispensary.

It is the confirmed opinion of all observers, that the Calabar bean acts powerfully on the accommodation of the eye, and is antagonistic to atropine, by having the power of contracting the pupil. It has

been shown by Mr. C. J. Workman, that in its action the accommodation seems to be affected before the iris; and that the effect lasts longer on the iris than on the ciliary muscle. But that permanent good can seldom be expected from its use, as he mentions but one case where there seemed to be permanency of improvement; and in that case, he writes only sixteen days after the extract was applied.

I have two cases, of really permanent cure from its use, to report:

March 6th, 1865. Cornelia M., aged 9 years, came with her sister, whom I was treating for phlyctenular conjunctivitis, to the Philadelphia Eye Dispensary, and upon entering the room, I noticed that the pupil of her right eye was very much dilated. Upon examination, I saw a small scar upon the outer edge of the cornea, and found complete paralysis of accommodation. The patient was a smart active girl, and answered readily and promptly all questions I put to her. I learned from her mother and sister, that when she was an infant, a fork was accidentally run in the outer side of the cornea, but without touching the lens, and that the pupil has remained dilated ever since, with loss of accommodation, now nearly eight years.

I put a small square of the celebrated gelatine made by Allen & Hanbury, London, in the eye.

March 8th. Pupil somewhat smaller, and accommodation improved. A small square of the gelatine again put in.

March 10th. Pupil the same size as the left eye, and accommodation perfect. Put another square in.

Returned, March 15th, with pupil and accommodation perfect.

I have seen the patient almost weekly ever since, and pupil and accommodation are still perfect, now, seven months after the application of the extract.

- Another interesting case is that of Mrs. C. U., aged 41 years, who came under my care at the Eye Dispensary, Feb. 3, 1865, with paralysis of the oculo-motor nerve.

When the patient presented herself for treatment, the upper lid of the left eye was hanging down, and the outer caruncle considerably lower than that of the other side, (perfect ptosis.) Upon endeavoring to open the eye, a slight upward movement of the eyelid remained, caused by the *musculus orbicularis palpebrarum*, which is governed by the facial nerve, relaxing itself still more. Upon raising the paralyzed lid, the pupil was found dilated, the cornea turned well outward, and, on looking toward the right side, it could not be brought to the centre of the palpebral fissure, showing paralysis of the internal rectus muscle. On attempting to look upward, not the least movement was perceptible, showing paralysis of the superior rectus and inferior oblique muscles. On looking downward, the superior oblique muscle, which is governed by the *nervus trochlearis*, alone acted, making a slight rotation around the visual axis, rather than a downward movement. Accommodation was paralyzed. There was considerable tenderness of the skin around the eye.

The whole affection came on suddenly about a month before. She

went to bed well, and, on rising the next morning, found it was impossible to open the eye. From the history of the patient no syphilitic affection could be discovered.

The diagnosis was that of a rheumatic affection.

She was ordered a teaspoonful of *vinum ergotæ* three times daily, and to rub around the eye *veratri salve*—grs. x. oz. j.

Feb. 15th. Can raise the lid half way. The tenderness of the skin has disappeared.

Feb. 28th. Can open the eye full three-fourths. Has regained power enough in the internal rectus to draw the cornea to the middle of the palpebral fissure; pupil still dilated, and accommodation imperfect; put a small square of the calabarized gelatine in the eye.

March 17th. Can open the eye full, and move the ball in every direction, but still not perfect command over the recti muscles. Pupil smaller, and accommodation much better. Put a slip of the gelatine in.

April 1st. Has complete power over the muscles of the lids and ball. Pupil still some little dilated. A slip of the gelatine again put in.

April 15th. Eye perfect. Has full power over all the muscles. Pupil normal, and accommodation good.

I saw the patient every few weeks, up to August, when I lost sight of her. When last seen, was on the street, and the eye was still perfect; pupil and accommodation normal.

It will be seen that these are two marked cases, and from the success arrived at, that permanent good not only may be expected, but can be had by the use of the Calabar bean in some cases of dilatation of the pupil and paralysis of accommodation.—*Philadelphia Medical and Surgical Reporter*.

3. *Eighteen Cases of Gun-Shot Wounds of the Head, observed at the General Hospital, Charlottesville, Va.* From Prof. J. L. CABELL, University of Virginia.

Case 1.—J. W. H.—, private Latham's Virginia battery, aged 37, entered the hospital August 11th, 1862, with a gun-shot wound, received August 9th, at the battle of Cedar Run, in the left temple, at or near the junction of the temporal with the parietal bone. The skull was found broken and pieces depressed. There was no paralysis and no mental aberration, but the night before the operation he was possessed with the idea that he would die in a very short time. He was operated on August 24th. In this case the trephine was used, and all the broken pieces were removed. About a week after the operation the patient had a slight attack of erysipelas of the scalp, but soon recovered from it. He has entirely recovered, but is injuriously affected by the heat of the sun.

Case 2.—John C.—, private 17th Georgia regiment, company "G," aged 23, received a gun-shot wound August 9th, 1862, at Cedar Run, on the left side of the head, near the parietal protuberance—

fracturing the bone, the internal table more extensively than the external (this, I believe, is generally the case). The mind was unaffected, but there was slight paralysis of the right side of the body. He was operated on September 14th—it was found necessary to use the trephine. Several pieces of bone were removed. Ten days after the operation erysipelas supervened, but was readily subdued. This case did well, constantly improving, until October 9th, when he was furloughed, at which time his wound had healed. He has not since been heard from.

Case 3.—W. C. A—, private 1st Georgia regiment, company "E," aged 22, admitted August 27th, 1862, with a gun-shot wound of the head. His general health was good. The wound in the scalp was about an inch and a half above the zygomatic process and half an inch anterior to the left ear—i. e., a vertical line drawn along the front of the ear. The wound was suppurating slightly, but there were no symptoms indicating any serious injury to the skull or brain. The patient was going about as if nothing was the matter, and eating heartily. When admitted, the probe could not be introduced to the skull—the track of the wound being closed, probably by a firm clot, which had not been discharged by suppurative action. At the next examination with the probe, four or five days after his admission, the probe readily passed downwards, under the temporal muscle, to the bone, which was fractured and depressed, but to what extent could not be ascertained except by cutting. The seat of fracture was about three-fourths of an inch above the zygoma, and to reach it required division of the swollen and puffy integument and the temporal muscles in the vicinity of the fracture. A consultation was held, and an operation determined on. The ball, a common musket one, had been removed through the wound by a surgeon shortly after the injury was received.

The operation was performed September 2d, one week after his admission, as follows: I cut through the scalp and muscle beneath, making two incisions, one vertical, the other horizontal, crossing each other at the wound in the scalp, and making each about two inches in length. In doing so it was necessary to apply two ligatures to the temporal artery and a branch of it. When the different flaps were partially dissected up, the fracture was found to be quite irregular, and as large, or larger, than a twenty-five cent piece, while the fragments were driven in and pressing upon the dura-mater. With considerable difficulty, thirteen pieces of bone were removed with the forceps; several of them were quite large and grooved on the inner surface, showing the seat of injury to be directly over the middle meningeal artery. After removing all the pieces that could be felt with the finger, the parts were drawn together by strips of adhesive plaster, and the wound dressed with wet lint. The patient had been put under the influence of chloroform, and kept so during the operation, but it required three or four assistants to hold him, the chloroform merely depriving him of sensibility. The next day slight erysipelas had made its appearance around the wound, involving the ear and side of the face, and

nearly closing the left eye. He was directed to take ten drops of muriated tincture of iron every two hours, and to keep perfectly quiet. In twenty-four hours the erysipelas had nearly disappeared, and the iron was discontinued during the day,

From the third day after the operation no unpleasant symptoms occurred, the wound suppurating finely and rapidly closing; and this, too, with the patient going about the hospital more or less every day, as it was found impossible to keep him in bed. The treatment after the disappearance of the erysipelas consisted solely in the application of wet linen twice a day to the wound, and keeping it clean.

September 18th.—The wound has healed, except just at the intersection of the two incisions. A small opening, the size of a probe, exists at this point, through which a slight discharge is kept up.

Case 4.—M. V. J—, private 35th Georgia regiment, company "B," aged 18, received a gun-shot wound in the head, near the parietal protuberance, making a slight groove or depression in the bone. The wound was received August 9th. When he entered the hospital he had jaundice. The side opposite to the wound was paralyzed. No regular record was kept of this case. He was not operated on. Furloughed October 7th, with slight improvement.

Case 5.—Benj. B—, private 16th Virginia regiment, company "F," aged 30, received a gun-shot wound August 30th, 1862, in right temporal region, fracturing the bone and depressing the fragments. He was operated on, September 6th, and the pieces removed. The wound healed in six weeks without a single unfavourable symptom.

Case 6.—Isaac S—, private 22d South Carolina regiment, company "H," aged 19, wounded August 20th, 1862, in the forehead, near the anterior fontanelle, and directly on the middle line. His general health was good. He was operated on, September 5th, and the trephine was used. The saw was applied to the right of the middle line to avoid the longitudinal sinus; but, curiously enough, it happened to be one of the cases in which there was a lateral deviation of that sinus, and when the disc of bone was removed, the sinus was found exposed, but uninjured, as far as could be seen. One week after the operation, severe chills set in, followed by fever; then double pneumonia, of which the chills were precursors, made its appearance, with symptoms of pyæmia; and sixteen or seventeen days after the operation, the patient died suddenly during a fit of coughing, from rupture of the longitudinal sinus and profuse hæmorrhage. *Post-mortem* revealed ulceration of the coats of sinus, with small spiculæ of bone resting upon them.

Case 7.—William R—, private — Alabama regiment, company "E," aged 26, wounded September 17th, 1862, on the right side of the forehead, at the root of the hair and below. The bone was extensively fractured and depressed, at or near the temporal ridge. No paralysis existed, and but little pain. He was operated on October 10th, at which time he had become much enfeebled. The scalp was undermined and the bone denuded around the fractured portion, and large quantities of pus were discharged daily. During the ope-

ration it was found necessary to use Hay's saw, to release a large fragment of depressed bone. No unpleasant symptoms followed, and the patient finally recovered with a large and depressed cicatrix.

Case 8.—G. H. S—, private 8th Georgia regiment, company "A," aged 27, wounded August 28th, 1862, in the head, fracturing both tables of the superior portion of the left parietal bone, and depressing them. In this case there was paralysis of the right side of the body, but the mind was clear. He was operated on September 23d, and all the pieces removed. The paralysis was entirely gone ten days after the operation. The patient rapidly improved, and was furloughed and sent home soon after. He is believed to have recovered entirely.

Case 9.—B. W. W—, corporal 3d South Carolina regiment, company "F," aged 24, wounded December 13th, 1862, "two inches above and to the left of the occipital protuberance." The wound in the scalp was three inches in length, and the bone was denuded for two and a half inches and slightly fractured. There was no depression that could be detected. This case was not operated upon. He seemed to be doing well for three or four days; then became restless; he had no fever, but soon became delirious. December 20th, coma supervened; afterwards, spasm—at first, of facial muscles, then it became general, and on the 21st he died.

Autopsy showed the external table slightly fractured, and the internal also for about an inch, but nearer to the middle line of the skull. About one ounce of extravasated blood, was found between the skull and dura-mater, and a like quantity between the latter and the brain. The brain itself was disorganized to the depth of three-fourths of an inch and to the extent of about two square inches.

Case 10.—J. W. A—, sergeant 15th South Carolina regiment, company "B," aged 26, wounded in the head December 13th, 1862, four inches above the right ear, fracturing the skull.

December 16th, 2 o'clock P. M.—Wound clear. Paralysis of left arm and leg. Tongue protruded straight. Temperature of the left side lowered. Cerebral matter oozing from the wound. Dr. Davis operated, making a Y incision, removing a minnie ball, the base of which was one-third of an inch below the level of the internal table; and a piece of the skull one inch in diameter, which it had carried before it, with a much smaller piece at the same level. Operation performed under chloroform. After removal of foreign bodies there was quite free arterial hæmorrhage from the bottom of the wound, which subsided in about fifteen minutes; but some oozing continuing, per sulphate of iron was applied for two or three minutes, on a dossil of lint.

December 18th.—Pulse 100-2. Slept well on the night of the operation from solution morphia two drachms. Took none last night and slept badly (owing, he says, to being cold). Is, and has been, rational. Appetite very good. No stool since the operation. A large piece of bone came from the wound this morning. He complains of the left arm and leg feeling asleep, and aching in the knee

and elbow. Tongue moist and clean. No hæmorrhage from the wound. A clot was removed yesterday. Discharge free and sanious.

December 19th.—Complained at dark last night of insatiable thirst, then had convulsions. Vomited and became comatose; at the same time, considerable hæmorrhage occurred from his wound. He now passes his urine involuntarily. The right arm is forcibly flexed. The left and both lower extremities are relaxed. In this condition he sank rapidly, and expired at 6 P. M. No autopsy was made.

Case 11.—J. T. D—, private 18th South Carolina regiment, company "H," wounded in the forehead, about two inches above the centre of the left eye. Date of the wound not remembered. He entered the South Carolina hospital September 6th, 1862, a few days only after its reception. He was operated on and several pieces of bone were removed. There were no head symptoms, and no paralysis existed. The case did well and he was furloughed October 8th nearly well.

Case 12.—E. P—, private Holcombe legion, ——— aged ———, received a gunshot wound just above the right eye, fracturing the bone about the middle of the supra-orbital arch. The fracture extended upward a short distance along the frontal bone, and backward along the orbital plate. He entered the South Carolina hospital September 6th, a few days after the reception of the injury, and was operated on the same day, as case 11th. The loose fragments were removed, including portions of the orbital plate. No bad symptoms ensued, and he was furloughed October 8th, nearly well.

Case 13.—A. McD—, private Palmetto Sharpshooters, ———, aged ———, wounded in the forehead at the outer extremity of the left frontal sinus, fracturing the bone to a considerable extent. His wound was received a few days prior to the 6th of September, 1862, at which time he entered the South Carolina hospital. He was operated on the same day, with cases 11 and 12. The outer wall of the sinus was removed; the inner was found uninjured. This man was furloughed November 11th nearly well.

Case 14.—S. D. M. La C—, sergeant 23d South Carolina regiment, company "K." This was the fourth case occurring in the South Carolina hospital in this place. He was wounded, and received here at the same time with cases No. 11, 12 and 13. His wound, also, was in the forehead, a little to the left of the middle line, midway between the eye and the root of the hair. There was an indentation of the bone, but no perceptible fracture. The periosteum was gone to the extent of about one square inch.

An operation in this case was not considered justifiable. The man at this time, July 1st, 1863, (I am informed,) is at home, not yet recovered, and suffering constantly with intense pain in the head, regretting that he was not operated upon.

Case 15.—The following case was not seen by a hospital surgeon until a few minutes after his death, as he was staying at a private house and was attended by a private physician:

G. A. H—, lieutenant colonel 14th Tennessee regiment, aged

55, wounded at Cedar Run August 9th, 1862. He was struck by a ball about midway between the mastoid process and the vertex on the left side. A single piece of bone was driven in upon the dura-mater, about the size of a twelve and a half cent piece, but irregular in outline. It was removed after death with forceps. He was delirious most of the time, and for some hours before his death, comatose. His death occurred August 14th.

Case 16.—N. M. M.—, major 14th Tennessee regiment, aged 30, wounded at the second battle of Manassas August 30th, 1862. A common musket ball struck the left side of the head, a little in front of, and on a level with the parietal protuberance. The skull was broken for about two and a half inches longitudinally (*i. e.* horizontally), and about one inch across. The wound in the scalp was still larger. The ball remained in the wound. He was not examined by a surgeon on the field, as no one who saw him thought he would live beyond a few hours at the most. The day following a large piece of bone was removed by his brother with his finger. He was perfectly unconscious for five days, and when, at the expiration of that time, consciousness returned, he was found to be paralysed on the right side of the body. Three months after the reception of the wound the ball was removed, as also a large piece of bone. Several smaller pieces were taken away, or discharged, at intervals; the last of them about four months after he was wounded. His brother says that some of the brain came from the wound shortly after the wounding, so that the membranes were probably extensively lacerated. His general health had not been good for four months before he was wounded, having suffered from chronic diarrhoea; this ceased, however, at the time. At present, July 1st, 1863, he is walking about with the assistance of a crutch. His paralysis is getting very slowly better; but he speaks with a good deal of difficulty. He frequently forgets what he is talking about, and says he cannot read anything from inability to connect the words into a sentence. His appetite is good and general health much improved. The wound is not yet entirely healed, and probably will not be for some time to come. There is a large cicatrized surface covering a depression two and a half inches long and three-fourths of an inch wide, beneath which, when the head is bent forward, the pulsations of the brain can be seen and felt distinctly.

The foregoing account I received from the major himself, never having seen him before it was written. I could not avoid coming to the conclusion at the time, that although his case certainly proved a man may recover from a terrible wound of the head without active surgical interference, it would have been far better for him, and saved him from a great deal of suffering, to say nothing of time gained, to have had the ball and fragments of bone removed at once, instead of waiting for them to become loose and come away spontaneously by a long and tedious process of suppuration. All the time running the risk of a disorganizing inflammation of the brain and its membranes, from their constant pressure and irritation.

Case 17.—S. M. W—, private 5th Alabama regiment, company "D," aged 25, wounded at Boonsborough, Maryland, September 14th, 1862, in the forehead, just at the root of the hair, and on the right side near the middle line. He was for a short time unconscious, and for several days after was occasionally delirious. There was no paralysis. He was taken prisoner at the time and carried to Philadelphia, where he was operated on ten days afterwards and the pieces removed, without the use of chloroform. His wound has entirely healed, leaving a depressed cicatrix. He suffers occasionally with a severe headache, which he attributes to his injury.

Case 18.—T. W—, a prisoner, 5th United States cavalry, company "D," aged 28, wounded at Brandy Station, June 9th, 1863, in the head, on the left parietal protuberance, about four inches above the left ear. The man was insensible for several days, and partially paralysed on the right side. Four days after the reception of the wound the ball and pieces of bone were removed. He is now (July 6th) apparently doing well and the wound healing. He never has any pain in the head, but complains of a constant numbness and pain in his right arm, with loss, to a considerable extent, of its motions; but this is rapidly improving. He bids fair to recover entirely.

Remarks.—The foregoing list of cases, drawn up by Surgeon Allen, from notes furnished by the different operators, exhibit results differing remarkably from those announced by Dr. McLeod, in his "Notes on the Surgery of the Crimean War," both as to the mortality of cases of gunshot fracture of the cranium, and as to the dangers incident to the use of the trephine. There were but two cases of actual perforation of the skull by the ball, and one of these (case 16) has recovered with a gradually improving hemiplegia. The patient articulates well, walks without his crutch, and begins to use his arm. As to comminuted fracture without actual perforation by the ball, the foregoing record proves that, even under the moderately favorable circumstances of a public military hospital, gravity of prognosis is an exceptional phenomenon.

4. *Amputation, Disarticulation and Resection Statistics of the Confederate States Army.*

Amputations of the thigh, whole number, 507; Primary, 345; recovered, 213; died, 132; 38 per cent. Secondary, 162; recovered, 43; died, 119; 73 per cent.

Amputations of the leg, whole number, 464; Primary, 314; recovered, 219; died, 95; 30 per cent. Secondary, 150; recovered, 76; died, 74; 49 per cent.

Amputations of the arm, whole number, 434; Primary, 294; recovered, 252; died, 42; 14 per cent. Secondary, 140; recovered, 87; died, 53; 37 per cent.

Amputations of the fore-arm, whole number, 114; Primary, 69;

recovered, 61; died; 8; 12 per cent. Secondary, 45; recovered 35; died, 10; 22 per cent.

Disarticulations, whole number, 135; Primary, shoulder-joint, 79; recovered, 54; died 25; 31 per cent. Primary, elbow-joint, 4; recovered, 3; died, 1. Primary, wrist-joint, 7; recovered, 5; died, 2. Primary, hip-joint, 3; recovered, 1; died, 2. Primary, knee-joint, 5; recovered, 2; died, 3. Secondary, shoulder-joint, 28; recovered, 8; died, 20; 71 per cent. Secondary, elbow-joint, 3; recovered, 2; died 1. Secondary, knee-joint, 6; died, 6.

Resections, whole number, 130; Primary, shoulder-joint, 41; recovered, 28; died, 13; 27 per cent. Primary, elbow-joint, 25; recovered, 22; died, 3. Primary, wrist-joint, 2; recovered, 2. Primary, knee-joint, 2; died 2. Secondary, shoulder-joint, 26; recovered 19; died, 7; 21 per cent. Secondary, elbow-joint, 29; recovered, 23; died, 6. Secondary, wrist-joint, 1; recovered, 1. Secondary, hip-joint, 2; recovered, 1; died, 1.

Amputations of the foot: Primary—Chopart's, 16; recovered, 13; died, 3; Symes's, 2; recovered, 2; Pirogoff's, 4; recovered, 2; died, 2. Secondary—Chopart's, 8; recovered, 7, died, 1; Symes's, 4; recovered, 4 (1 unsuccessful, requiring subsequent amputation above the ankle-joint).

A vast number of additional operations are received, but without positive results, and therefore they have not been included in the above list.

We may be well satisfied with the results of these statistics, which, carefully excluding all doubtful cases, are compiled from those operations only that have reached a positive conclusion. A general summary of the above table shows that the mortality after 1,814 operations, including amputations, resections and disarticulations, amounted to 632, giving a death ratio of 34 per cent.

The only statistics on this subject from the Federal army we find in the United States Army and Navy Journal for November, 1863, which gives the amputation statistics for September, October, November and December of 1862, as follows: Whole number, 1,342; deducting 516 under treatment January 1, 1863, 826. Of this number, 336 died; a mortality of 40 per cent.

The journal to which we owe the above observation gives the following table: Whole number, 1,342; returned to duty, 100; furloughed, 25; deserted, 11; discharged, 350; died, 336; secondary operation, 34; under treatment January 1, 1863, 516.—*Confederate States Medical and Surgical Journal*.

5. *Report of Eruptive Fevers treated in General Hospitals, Department of Virginia, from October 1st, 1862, to January 21st, 1864. Consolidated by Surgeon WM. A. CARRINGTON, Medical Director.*

MONTH.	ERYSIPELAS.		RUDEOLA.		SCARLATINA.		VARIOLA.		VARIOLOIDES.		ALL OTHERS, &c.
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.
1862—October	38	5	337	3	4	0	12	1	1	0	17
November.....	58	3	298	8	2	0	161	30	54	0	10
December.....	68	5	158	3	1	0	424	145	213	5	17
1863—January.....	118	15	146	0	5	3	438	221	169	9	5
February.....	99	10	92	7	1	1	187	137	87	5	27
March.....	70	11	136	9	34	0	133	57	57	4	19
April.....	127	9	80	3	4	0	192	62	120	1	59
May.....	200	13	132	1	2	0	66	39	41	1	123
June.....	165	14	91	5	3	1	110	24	60	1	67
July.....	86	6	48	1	2	0	43	30	68	2	35
August.....	74	5	51	1	0	0	8	4	6	2	7
September.....	40	1	18	0	0	0	0	0	1	0	15
October.....	50	6	6	1	0	0	13	2	9	0	19
November.....	59	2	33	1	0	0	100	13	27	0	32
December.....	72	3	87	1	0	0	403	114	96	0	5
1864—January.....	62	0	494	2	0	0	223	141	187	9	86
Totals.....	1,386	108	2,207	46	58	5	2,518	1,020	1,196	39	543
Per centum of deaths,	-	7.79	-	2.09	-	8.62	-	40.58	-	3.26	

Per centum of eruptive fevers (7,903) to total number of cases treated (178,586) —4.42.

Per centum of deaths from eruptive fevers (1,218) to total number of deaths (10,961) —11.11.

Mortality in all cases treated, 6.13; in eruptive fevers, 15.41; in variolous diseases, 28.76.

C. S. Med. & Surg. Jour.

6. *Conservative Surgery in Compound Fracture of Femur.*

The military surgeon has no question submitted to his discretion of more importance, than to determine upon the propriety of amputation in compound fractures of the femur, the result of gunshot wounds.

The authorities, both French and English, teach us not to trust these cases to nature, and broadly state that, in the operation alone, there is hope; but the statistics, both in the Crimean campaign and in our own service, prove that the mortality after amputation is enormous, and force us to consider the propriety of conservative practice in this numerous class of surgical accidents.

In various numbers of the Journal, the reader will find many interesting observations bearing upon this question, and we submit at this time a consolidated statement of compound fractures of femur treated without operation, compiled from the records in the Surgeon General's office, from June, 1862, to February 1, 1864, inclusive. We have, in this summary, excluded all cases not positively determined, and hence, while the number of observations is greatly reduced, the value of the conclusion is increased in like proportions.

Total number of cases, 221—recovered, 116—52 per cent.

Average period of recovery, 104 days—greatest period, 255 days,

and least, 41 days. Average period where death occurred, 52 days—greatest period, 185 days—least, one day. Average amount of shortening, 1 9-10ths inches—greatest, 5 inches, and least, half an inch.

When we compare directly the results of amputations with the table of cases not operated on, we feel still more disposed to rebel against the authority of Guthrie, McLeod, Larrey, Percy and Dupuytren, and at least hesitate before condemning the shattered limb to instant ablation. Our own statistics are as follows:

507 cases amputated—250 recovered—50 per cent.

221 cases *not* amputated—116 recovered—52 per cent.

The chance for life being more than equal, the value of the leg saved should be considered, and the table throws important light on this point—the average shortening is less than *two inches*.

Legouest.

1,664 cases amputated—recovered, 123—7 per cent.

337 cases not amputated—recovered, 117—31 per cent.

Chimborazo Hospital Statistics.

31 cases not amputated—recovered, 19—61 per cent.

These observations prove that whenever, in compound fracture of femur, the result of gunshot wound, there is a doubt as to the propriety of amputation, that we should give the leg the benefit of the doubt—the chances of life being at least equal, and the value of the limb, after recovery, being worth the effort to save it.—*C. S. Med. & Surg. Jour.*

7. *Contributions to the subject of Compound Fracture, being an analysis of 302 cases.* By Mr. BRYANT, Assistant Surgeon to Guy's Hospital.

The cases analysed in this paper occurred in the practice of Guy's Hospital during the last twenty years. Of these cases

17 or 5.6	per cent.	were of the thigh,
193 or 63.9	"	" leg,
35 or 11.5	"	" arm,
57 or 18.8	"	" forearm.

11 out of the 17 cases of compound fracture of the thigh proved fatal, or 64.7 per cent. 74 out of 193 examples of compound fracture of the leg were fatal, or 38.3 per cent. 4 of the 35 cases of compound fracture of the arm died, or 11.4 per cent. And 7, or 11.2 per cent. of the 57 cases of compound fracture of the forearm. Of the whole number of 302 cases, 96 were fatal, or 31.7 per cent. In these 96 cases, it appears that in cases subjected to amputation pyæmia was twice as fatal as in others treated on conservative principles, and that exhaustion and gangrene were more common causes of death; that

in cases treated on ordinary surgical conservative principles delirium tremens and tetanus were more common causes of a fatal result. Analysing the 17 examples of compound fracture of the thigh—9 underwent primary amputation; 6 died, and 3 recovered. 1 underwent secondary amputation; fatal. 7 were treated on conservative principles; 4 died, and 3 recovered. 10 were thus treated by amputation, and 7 of these died, or 70 per cent. 7 were left to nature's efforts for repair, and of these 4 died, or 57 per cent. After giving an outline of the fatal cases, the author goes on to remark, first, on the rarity of compound fracture of the thigh, the accident bearing the proportion only of 5.6 per cent. to the other cases involving the larger bones of the extremities. This fact is well borne out by the experience of all surgeons. The excessive mortality of these cases is the second point to which allusion is made, 64 per cent. of the whole number of cases proving fatal. In nearly 60 per cent. amputation was had recourse to, and 70 per cent. of these cases subsequently sank. The extreme severity of the majority of these cases rendered primary amputation absolutely essential. More than half the examples died, or 57 per cent., in which attempts had been made to save the limb; and the cases in which recovery had taken place were in young and healthy subjects. The author then passes in review the opinions of some military surgeons on the subject, and points out how Dupuytren, Hennen, Larrey, Guthrie and others, agree that in *compound fracture of the thigh from gunshot wounds*, "*in rejecting amputation we lose more lives than we save limbs*;" and also, "that in the exceptional cases, which result in consolidation, the condition of the limb is not encouraging." He quotes Macleod's Crimean experience as indicating the same opinion, this surgeon advising amputation in all such cases when taking place in the middle and lower third of the thigh, and hesitating only in a like recommendation in cases of fracture of the upper third, on account of the extreme mortality of such amputations. Malgaigne's and Bauden's experience is next quoted to prove the poor success of conservative treatment in these injuries, the latter surgeon saving only 2 out of 25 cases, and these two retained useless and deformed limbs. The author then goes on to say that the experience of civil surgeons is not unlike that of their military brethren, although it is much more limited; and he expresses an opinion, which he believes to be generally entertained, that a satisfactory result can rarely be obtained by conservative treatment, except in the most favorable cases,—that is, when the subjects are young and the fracture uncomplicated; when the soft parts are not materially damaged nor the bone comminuted. When the bone is comminuted and the soft parts seriously involved (such a condition being generally produced by local mechanical violence), he believes that a satisfactory termination of the case must be regarded with doubt. If the patient should be old or unhealthy, amputation should be at once performed; and if there should be a doubt as to which line of treatment to adopt, *the safest is to decide on amputation*. But if the subject should be a young and healthy

one, and not subjected to injurious hygienic influences, the author believes that a satisfactory termination might be obtained by removing at once the broken and disconnected fragments of bone (enlarging the wound if necessary), and by maintaining the absolute repose which is so essential. He believes it to be bad practice to leave the broken fragments in position, with the hope of union; for by doing so we leave a constant source of irritation, which must retard the local process of repair, as well as seriously weaken the powers of the patient, a subsequent operation being almost necessarily required to remove what will become necrosed bone.—*Proceedings of the Royal Med. and Chir. Society*, February 12, 1861.

CLINICAL LECTURES.

A Case of Extensive Tubercular Disease of the Cervical Portion of the Spinal Cord.

The notes of the following cases were reported by Mr. Thomas Cole :—

Eliza E—, aged sixteen, fair and florid in complexion, with a rather healthy look, and not emaciated, was admitted April 5th, 1865.

She stated that five weeks previously she was attacked with tremor in the extremities, and a cold feeling pervaded her whole frame. Her neck then became stiff, and afterwards her arms and legs, in which latter she completely lost all power of motion. At first she also lost the power of sensation; this, however, gradually returned, and on admission she possessed it universally. The bladder was found to be much distended, making an abdominal swelling like the uterus in the sixth month of gestation. The urine from the over-distended bladder had previously dribbled away; but after her admission it was carefully drawn off by catheter twice daily. A bed-sore of large size existed on the lower part of the back, over the sacrum; she was therefore placed upon a water-bed.

April 7th.—She can now move her upper extremities so far as the hand and forearm are concerned; but she cannot fully raise the arms or shoulders. When her head is moved (lifted up) she experiences pain in the upper part of the back. There is rigidity of the muscles in the cervical and upper dorsal regions, but no tenderness on pressure. She has an almost continuous pain extending from the feet to the knees, and sometimes as high as the hips: this varies in intensity. Often she has a tingling in the legs, the muscles of which at times spasmodically contract. She perspires much at night. Her pulse is 104, full and regular.

8th. Two superficial eschars were made with caustic potash in the

lower cervical region, on each side of the spinal column. A twelfth of a grain of bichloride of mercury, in decoction of cinchona, to be taken three times a day.

10th.—Pulse 100. There is now marked improvement as regards the power of the muscles of shoulders and arms. Her legs move spasmodically, with the effect of making them painful. Appetite bad.

12th.—Temperature in axilla, 99.50 deg. She cannot lift her arms so high as she could. Her urine contains puriform mucus in large quantities. The pain in the legs is just as severe as before.

From this date to the 6th of May she gradually became weaker, and the bed-sore spread widely and deeply. On the 5th of May her pulse was 148, hurried and feeble in the extreme. Her urine daily became more and more ammoniacal, with large deposits of urates, pus, &c., and lessened every day in quantity. The fæces was always passed involuntarily. She died on May 6th.

Post-mortem Examination.—The brain was quite healthy. The spinal cord in the lower cervical region was pushed backwards, and compressed against the vertebral arches by an extensive tubercular deposit, external to the dura-mater. This part of the spinal cord was soft and pulpy for about two inches; lower down it appeared somewhat shrunken and wasted. There was no great vascularity of the surface, and no effusion of serum. The periosteum covering the posterior surface of the bodies of the fourth, fifth, sixth and seventh cervical and first dorsal vertebræ was more or less destroyed and detached, leaving the surface of the bone bare, white and rough. Between the fifth and sixth cervical vertebræ the intervertebral substance was almost completely destroyed, and a passage in this way established to the front of the spine, where there was an abscess behind the pleura, containing about six ounces of scrofulous matter. She had no disease of the lungs. The kidneys, unfortunately, were not examined.—*Lancet*.

ORIGINAL CORRESPONDENCE.

For The Richmond Medical Journal.

NEW YORK, December 15th, 1865.

New York to Richmond, greeting:—

Accept our congratulations, on so soon taking the field in periodical literature, after a dreary interval of four years, during which the sword, unfortunately, has been more busy than the pen, and our profession has been so much absorbed in administering to the necessities of the afflicted, as to have had but little time for the cultivation of science

and the interchange of the results of its labors. But with the happy change of scenes which has taken place, we are as ready as ever to labor for the dissemination of truth among our brethren—and that, too, solely for truth's sake—and therefore we congratulate this "Richmond in the field" which she has heretofore so adorned, and to which she will doubtless do honor in the future. New York reminiscences of professional Richmond are of a pleasant nature, and we gladly recall the interchange of courtesies of former times.

The termination of an unhappy strife has been followed by a renewal, with a fresh impetus, of professional teaching in our city, as well as of professional labors, and it may interest your readers, which I trust will be numerous, to hear from time to time what is going on in our metropolis.

We have now three schools of medicine in full and successful operation, with all of which your readers—some of them at least—are doubtless familiar. The old "Crosby Street School," as it was formerly called, and now known as the "Twenty-third Street College"—time-honored and deservedly so; the "University Medical School," or "Fourteenth Street School," as more familiarly called, with its well-earned reputation; and the Bellevue Hospital Medical College, of but recent institution, but strong in its advantages, both as to men and material, and zealous in its labors, which are already rewarded by a plentiful response in the way of numbers.

We have also several societies in active operation, meeting once or twice a month, in addition to the Academy of Medicine, which embodies nearly one-quarter of all the regular practitioners of the city, and a large proportion of those most active. An interesting and recent event in connection with this body has been a discourse before its members and others on the life and character of Doctor Valentine Mott, one of its former Presidents, and the most honored and celebrated of American surgeons, by Professor Alfred C. Post, his successor in the Chair of Surgery in the University Medical School of our city. The address was able and interesting, and gave a truthful and graphic sketch of the valuable services rendered to his country and to the world by this distinguished man, and of his standing in professional and social life and as a Christian, and was listened to with much gratification by a large audience.

There has also recently been an annual meeting of an association of which our city may well be proud, as well for its purely disin-

terested character as for its being the only one of the kind—at least so far as we know—in our country. We mean the “New York Society for the Relief of Widows and Orphans of Medical Men,” instituted in 1842, now numbering one hundred and nine members, of whom eighty-two are for life and twenty-seven annual subscribers. It has also twenty-five “Benefactors,” of whom three are laymen—a class constituted such by the payment of \$150 or upwards. The families of six of its deceased members at present receive aid from its funds, which now amount to fifty-six thousand and five hundred dollars (\$56,500), all invested either in bonds or mortgages or in United States securities—by far the larger proportion in the latter. The idea of this institution in our city originated with Dr. Edward Delafield, one of our oldest and most distinguished practitioners, who has done so much for the advancement of the profession among us, and who still labors in the same cause with the ardor and industry of younger days. With the aid of a few whom he selected, the society was organized and a charter obtained, and he lives to see it crowned with a success even beyond his expectations. His idea of its value to the profession was derived from that of a similar organization in London, which has now been in successful operation for many years. The executive duties of the society are in the hands of twenty-one managers, some of whom may be changed every year. At the annual meeting just held, Dr. H. D. Bulkley was re-elected President, and Drs. W. Detmold, Alfred C. Post and Edward L. Beadle, Vice-Presidents, for the ensuing year.

Another association of local interest here, but of important bearing upon the interests of our profession, is the “New York Medical Journal Association,” which, though of but recent origin, promises success in the promotion of social intercourse, as well as in the advancement of science and literature, among us. It now numbers over one hundred members, made such by the annual payment of ten dollars. A reading room has been provided in the central part of the city, which has been appropriately furnished, and is kept warmed throughout the day and evening, and lighted in the evening, to which members can resort for the perusal of journals of medicine kept there for that purpose, and where medical friends from other places can be introduced. It is intended to have on the tables the medical periodical literature of the world, so far as it can be reached, and where the friends of the association will warrant it, which they promise soon to

do. It is also the intention of the trustees to extend the collection so as to embrace valuable monographs on medical subjects.

A novel feature just introduced in connection with this association, and one likely to aid in advancing its interests, and thus extending its usefulness, is a "Reunion" of its members, with a number of invited guests from among those of the profession most favorable to such enterprises, which took place this week at the room of the association, on the corner of Broadway and Twenty-second street. Manufacturers of surgical and other professional instruments were invited to bring anything new in their line, and the result was that two large tables were covered with instruments of various kinds. The endoscope, an instrument recently invented by Dr. Desormeaux, of Paris, for the purpose of investigating, by actual inspection, diseases of the urethra and of the inside of the bladder itself, and which is now used by several of our practitioners here, and with apparently satisfactory results, and which promises literally to throw light on parts heretofore entirely hidden from view, was exhibited in its different modifications by Dr. Bumstead, who described its objects and its uses; and also a lamp recently contrived by Cruise, of Dublin, for furnishing a steady and powerful light for its use. There was also an improved form of the laryngoscope, and a variety of instruments which we have not space to enumerate, but which attracted much attention and occupied the time of those present during the greater part of the evening.

We will merely allude, in passing, to one invention, or rather contrivance, for the aid and comfort of those who are so unfortunate as to have but one arm. We mean a combination of knife and fork, contrived by our fellow-citizen, Dr. Detmold, which was so well received in Washington as to have bestowed on it the name of the "Detmold Knife," the peculiarity of which is a blade curved like a cimeter at its lower end, so that the food is divided by a rolling or rocking motion given to it, while the extremity is divided into prongs, by means of which the food can be taken up and carried to the mouth.

Among the surgical curiosities of the occasion was a soldier, the greater part of whose lower jaw had been carried away by a piece of a shell, whose damages Dr. Gurdon Buck, of our city, had repaired in his happy and successful manner of doing such things, for which he has already gained much reputation.

After the mental faculties had been duly instructed, and the social

feelings indulged in for about two hours, the inner man was agreeably refreshed by coffee and chocolate, served up in an adjoining room, with appropriate accompaniments, to which full justice was done. The whole affair was a decided success, and impressed those present that the occasion was a most interesting as well as instructive one, and that an association which provided such an entertainment for both brain and stomach ought to be patronised.

But, Messrs. Editors, I will not presume any farther upon your indulgence, lest you should be led to imagine that the professional men of a certain city are apt to think too much of themselves and their own affairs, and are too fond of palming them off upon their neighbors.

With many wishes for the success of your new undertaking, by one who can sympathise somewhat with the difficulties with which you will have to contend, I am,

Yours, &c.,

X. Y. Z.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

[NOTE.—It is impossible to find room for the reviews of works in this number of the *Journal*.]

- I. *A Treatise on Human Physiology, Designed for the Use of Students and Practitioners of Medicine.* By JOHN C. DALTON, M. D., Professor of Physiology and Microscopic Anatomy in the College of Physicians and Surgeons, New York, Member of the New York Academy of Medicine; of the New York Pathological Society; of the American Academy of Arts and Sciences, Boston, Massachusetts; and of the Biological Department of the Academy of Natural Sciences of Philadelphia. Third Edition. Revised and enlarged, with two hundred and seventy-three illustrations. Octavo. Pp. 706. Blanchard & Lea. Philadelphia. 1864.

We have just received from the publishers the third edition of this valuable work.

It is unnecessary to submit an analysis of a production so widely, acceptably and generally known. Wherever physiology is specially studied and investigated, the name of the author is familiarly mentioned, and his claims to eminence in this department uniformly admitted.

Concise and comprehensive in his style; specially careful in the avoidance of theories that have not yet been ocularly demonstrated; apt in illustration and happy in explanation; a companion of the foremost investigators, if not a pioneer in the field of discovery; this author is justly accepted as an accurate writer and valuable teacher. It is safe to say that this work contains, and when practicable, explains all that is by the best writers accepted as truth.

The most enduring and eloquent eulogy of the author's talent, reliability and indefatigable industry, this work will long be a literary and scientific guide and companion to the physiologist, the physician and the student.

- II. *The Pathology and Treatment of Venereal Diseases.* By FREEMAN J. BUMSTAD, M. D., Lecturer on Venereal Diseases at the College of Physicians and Surgeons, New York; late Surgeon of St. Luke's Hospital; Surgeon to the New York Eye and Ear Infirmary. Revised Edition, with illustrations. Philadelphia. Lea & Blanchard. 1865. Octavo. Pp. 640.

There have been many manuals and monographs on this subject presented to the profession, but this work is one of the very few that gives to this important branch of surgery and medicine that thorough analysis and comprehensive discussion, so specially valuable to the physician who seeks an enlightened system of therapeutics and mechanical mode of relief, through an accurate knowledge of pathology. Though differing with the author on minor and subordinate questions relative to venereal pathology, in all that is practically important we can recommend his work as safe and valuable authority. The author has examined the whole field in which he has so creditably labored with admirable care, and not only offers a yield specially his own, but has gleaned much which other workers have carelessly or unconsciously failed to add to the common harvest. His work is a very useful and acceptable addition to our libraries on this subject.

- III. *Treatise on Military Surgery and Hygiene.* By FRANK HASTINGS HAMMOND, M. D., late Lt. Colonel Medical Inspector U. S. A.; Professor of Military Surgery and Hygiene and of Fractures and Dislocations in Bellevue Medical College; Surgeon to Bellevue Hospital; Professor of Military Surgery in Long Island College Hospital; Author of "Treatise on Fractures and Dislocations," and of a "Practical Treatise on Military Surgery." Illustrated with 127 engravings. New York. Bailliere Bros. 1865. Octavo. Pp. 648.

This work, just received from the publishers, is not offered by the author as a complete record of the experience of his collaborators in the field, yet it will be acceptable wherever it is read, as embodying most of the information which, by the press, has been made the common property of the profession. Field conveniences and inventions, hospital improvements and appliances, the most efficient disposition and management of the transportation of the wounded, with a careful review of all specially interesting and valuable in military surgery, have been honestly analysed and laboriously examined. The author's work seems to give to both the experienced and those uninformed, in regard to the arduous labors, the unheralded and unrewarded triumphs of the army surgeon, a true and faithful picture of the moral heroism, physical courage and indefatigable exertions which the medical staff of an army in the field is called upon to display. In addition to its military relations, which must always be valuable to those in charge of the disabled soldier, this work is a very true mirror of American military surgery.

- IV. *Hand-Book of Surgical Operations.* By STEPHEN SMITH. Fifth Edition. New York. Bailliere Bros. 1863.

This manual is well known by the physicians of this country. It has been received, and generally used, as an admirable guide and teacher in scenes where the surgeon needed timely counsel and judicious advice. So far as is known, there is no manual of the kind superior to it, and none so far seen that can be accepted as its equal. The value of this work is specially great to the military surgeon, for whose use it was most probably particularly designed, but it will always be a useful and convenient guide to the practical surgeon.

- V. *Lectures on Inflammation, Delivered before the College of Physicians, of Philadelphia, under the bequest of Dr. Mutter.* By JOHN H. PACKARD, M. D. Author of "A Manual on Minor Surgery," etc. Philadelphia. J. B. Lippincott & Co. 1865. Octavo. Pp. 276. (From the author.)

These lectures are especially recommended to the members of the profession, as an admirable analysis and review of this interesting and obscure subject. The relations of Physiology and the Collateral Sciences have been carefully examined, and all that modern research has contributed for the elucidation of this interesting problem, is liberally and accurately presented.

- VI. *The Practice of Medicine.* By THOMAS HAWKES TANNER, M. D., F. L. S. Member of the Royal College of Physicians; Vice-President of the Obstetrical Society of London, etc. From the fifth London edition, enlarged and improved. Philadelphia. Lindsay & Blakiston. Octavo. Pp. 817.

As this valuable and important work will be carefully reviewed, nothing more will be said at present than, that in simple and classic diction, in a practical consideration of sub-

jects, and in their agreeable presentation, this familiar author is a successful competitor of the popular, highly esteemed and venerable Watson.

VII. *Chloroform, its Action and Administration.* By ARTHUR ERNEST SANSON, M. B. London. Late House Physician and Physician Accoucheur's, Assistant to King's College Hospital. Philadelphia. Lindsay & Blakiston. 1866. Octavo. Pp. 279.

This work, just received from the publishers, supplies a want long felt. The history, literature, discovery, influence, chemistry, effects, Physiological action, dangers, obstetrical and surgical relations, etc. of this agent are admirably presented. At the present time, when various substitutes are being, with some success, presented, efficient defence of this anæsthetic is specially welcome and valuable.

VIII. *A Hand Book of Uterine Therapeutics.* By EDWARD JOHN TILT, M. D. Member of the Royal College of Physicians. Consulting Physician to the Farringdon General Dispensary; Fellow of the Royal Medical and Chirurgical Society, and of several British and Foreign Societies, etc. New York. William Wood & Co. 1864.

Dr. Tilt has long and eminently labored in this field. Few writers have been more patient and laborious in this investigation, and more successful in regard to the result. This work is devoted to the discussion of the following subjects: Uterine dietetics; anti-phlogistic treatment; sedatives; caustics; tonics; hæmostatics; emmenagogues; specific treatment; uterine orthopædics; uterine complications; sterility; prevention of uterine inflammation, etc. It is not necessary to say that Dr. Tilt discusses these subjects admirably, for his ability in this special connection has long since been established. This work will certainly add to his reputation as a Pathologist and writer.

IX. *The Correlation and Conservation of Forces.* A Series of Expositions by Professors Faraday, Grove, Helmholtz, Liebig, Drs. Mayer and Carpenter. By EDWARD L. YOUNG, M. D. New York. D. Appleton & Co. 1865.

As this work will be reviewed, no notice will be given in regard to it further than to state that these admirable essays have received the commendation of the most distinguished and scientific writers, both in Europe and America.

NOTE.—No space for more notices.

MISCELLANEOUS.

Life-value of Premature Labor.—The distinguished obstetrician, Edmund A. Kerby, M. D., etc., on remarking upon the value of inducing premature labor, as an advantage over craniotomy, produces the result of his experience in the following statistics: in craniotomy, one mother in five dies, while in the induction of premature labor there is a loss of only one mother in fifty.

The Relation of the Intellectual Functions to the Pons-Varolii.—It is an interesting fact, that in examining the brains of two hundred and eighty-nine cases of lunatics, the pons-varolii was only observed to be affected in two instances. This testimony goes far to establish the fact that the intellectual functions are entirely independent of the pons-varolii.

Complete Transposition of all the Thoracic and Abdominal Viscera.—The following interesting facts were observed in a post mortem examination of a lady who died at the advanced age of 85 years.

On opening the thorax and abdomen, a complete transposition of all the organs presented itself. The heart lay with its base towards the left side of the spinal column, the apex pointing towards the right side, and reaching to the lower border of the fourth rib under the right mamma. The pulmonary cavity of the heart, which was also on the left side; the aorta and systemic ventricle to the right; so that not only was the heart reversed in position, but also in formation. The left phrenic vein was lying on the superior vena cava; the right innominate was seen passing over the aorta to the left, and emptying itself into the superior vena cava. The lungs were healthy, but old pleuritic adhesions existed on both right and left sides, especially the former. The larger lobe of the liver was in close proximity to the left ribs, the smaller lobes extending only slightly to the right of the sternum. The spleen was situated on the right side, just beneath the heart; œsophagus lying to the right of the aorta. The stomach was situated on the right side, with cardiac extremity touching the ribs, and the pyloric end extending to the left side of the mesial line; sigmoid flexure of colon was on the right side.

Leprosy.—The etiology of this disease has at last been established; chemical analysis, in connection with a long series of investigations, has proven it to be a true dyscrasia or disease of the blood. An altered condition of the blood, demonstrable by chemical analysis, accompanied the premonitory symptoms; the blood always containing an excess of albumen and fibrin. This fact is satisfactorily proved by examining the history of leprosy, as it has appeared in various countries. In Norway and Ireland, where the population inhabit small, close and dimly lighted huts; where the people are unclean in their personal habits, breathe a moist, marine atmosphere and live on inferior food, this disease is yet frequent. During the middle ages, when the population had become too numerous to be sustained by the produce of the chase, and before the art of producing large supplies was understood, leprosy was common in all parts of Europe. It disappeared as soon as full supplies of fresh meats, vegetables and bread were produced. In Egypt, Palestine, Spain and Brazil, where the very poor dwell in dark and unventilated huts, and where want and dirt are conspicuously manifested, lepers are still to be found. This disease now occurs exclusively among the lower grades of society. The disease is not contracted by those enjoying good diet, and surrounded by good hygiene conditions.

Amputation at Hip Joint.—Mr. Spencer Wells has recently performed amputation at the hip joint for malignant growth of the thigh. The patient, a young married woman, recovered from the operation.

Legal Evidence of Life in an Infant.—A case of great interest in medical jurisprudence (case of Brock *versus* Kellock), has recently been decided by the Vice Chancellor, Sir J. Stuart. The point at issue was to determine the legal evidence of life in an infant. Dr.

Robert Lee and Dr. F. H. Ramsbotham contended that the proof of respiration having been performed was necessary to establish the fact of extra uterine life. Dr. Tyler Smith, Dr. Freeman and Dr. Alfred Taylor deposed that the continuance of the heart's action after the severing of the umbilical cord must be accepted as proof of independent life. The Vice Chancellor, in his decision, confirmed Dr. Tyler Smith's view of the case, and expressed his surprise that a man in Dr. Lee's position should have made such an affidavit. There was a large pecuniary amount involved in the decision. The case is of great importance, as it will serve to establish the law, which has been much unsettled upon the point at issue.

Cure of Gonorrhœa by Blisters.—H. Chalmers Miles has presented a very interesting paper on this subject. By absolute rest, low diet, the administration of mild purgatives and a blister applied either to the corpus spongiosum or to the inside, of the thighs he succeeds in uniformly arresting this disease, and restoring his patient to health in three or four days.

Radical Cure of Inguinal Hernia.—Mr. Kingdon, Surgeon to the City of London Truss Society, testifies that the majority of operations for this purpose are ineffectual, inasmuch as the patient is not benefitted for more than a few months. He furnishes seven cases in which Wutzer's ——— operation (the favorite operation with surgeons) had practically failed. The patients had been operated upon by some of the best surgeons in the city of London. There can be only one opinion respecting operative surgery. Its only claim is based upon the permanent benefit which it can effect; and if experience proves that any one operation fails, even at a remote period, in its object, it is the duty of those acquainted with the failure to make the facts public, in order that a proper value may be attached to the proceeding.

Pus Cells in the Atmosphere.—The following discovery has recently been made: In the Orphan Asylum, near Prague, an epidemic of purulent ophthalmia, lately prevailed, and ninety-two children out of two hundred were attacked. Great care was taken to avoid the contact of the matter, but the medical attendants and nurses, nevertheless, contracted the disease. M. Eiselt thereupon proceeded to examine the air with Pouchet's æroscope, improved by Purkynje, and in the atmosphere of a ward where lay a great many of the children, a large number of puss cells were found. In fact, the cells were noticed upon the instrument as soon as the air was made to pass through the apparatus.

Duration of Life on the Mediterranean Coast.—It will be observed that, contrary to what is usually supposed, the average duration of life on the Mediterranean coast is far below the standard existing elsewhere. The average duration of life is twenty-nine years at Pisa and elsewhere, and twenty-eight only at Rome and Naples; whilst at Paris it is thirty-nine, and in London forty-four. For corroborative

evidence refer to Dr. Carriere's highly esteemed work on "*Le Climat de l'Italie*."

Mortality in Variola and Varioloid.—It is gratifying to state that the mortality in these two diseases was not greater in the military hospitals of the Confederacy than in the chief small-pox and vaccination hospitals of England.

In the English hospitals, mortality in variola is 34.78; in Confederate hospitals, mortality in this disease was 40.58. In varioloid, in the English hospitals, the mortality is 9.46; in the Confederate hospitals, the mortality was 3.26. When the many disadvantages attending the construction and establishment of the Confederate small-pox hospitals are considered, this fact is as remarkable as it is gratifying.

Bloody Sweat.—In St. Mary's Hospital, London, a well marked case of this kind has occurred, satisfactorily authenticating the agonies of Gethsemane. It is proper to state that this was a case of vicarious menstruation, occurring in a young woman of twenty-seven years of age.

Pulsation of the Heart after Cessation of Respiration.—An instance has recently occurred in England where the action of the heart continued fully twenty minutes after all respiration had ceased.

Special Hospitals.—These hospitals have been condemned. The report of the Queen's Hospital, Birmingham, endorses the statement, that much detriment to the public and the medical profession arises from the practice of opening small institutions under the name of hospitals for particular forms of disease, in the treatment of which no other management, appliance or attention is required than is to be found in existing general hospitals. It should not be forgotten as a part of the duty of all who protested against the development of special hospitals, that the most efficient arrangements are required for making the treatment of various diseases as complete as possible in general hospitals.

The Cause of Diabetes.—In a case of diabetes, in the service of M. Trousseau, at the Hotel Dieu, he endorses M. Bernard's deductions in regard to the cerebral origin of this disease. It will be remembered that, by pricking certain spots in the walls and floor of the fourth ventricle, M. Bernard succeed in producing diabetes in animals. In the case of M. Trousseau's patient, the grey, nervous substance, in the neighborhood of the fourth ventricle, was found in a state of fatty degeneration. A similar condition was ascertained to exist in another patient who recently died from diabetes, the details of whose autopsy were presented to the Biological Society by M. Luis.

Testicle retained in the Inguinal Canal.—At a meeting of the Pathological Society of London, Mr. Curling showed a specimen of an undescended testicle; in this no spermatozoa were found. The struc-

ture was natural, but neither in the testicle nor the vas deferens, nor in the vesicula-seminalis, were there any spermatozoa. Debate elicited the interesting fact, that this is the usual condition in cases of undescended testicle. Mr. Curling also showed the testicles of an idiot; the structure of the testicle was undeveloped. He demonstrated that this condition frequently coexisted with undeveloped brain.

The Cisticercus Cellulosus transformed within the Organs of a Man into Tænia Solium.—Messrs. Kiichenmeister, Leuckart and Humbert have at last succeeded in proving that the cisticercus cellulosus, when swallowed or received into the system by injection, is transformed into the tænia solium.

The Impropriety of Administering Morphia in Diseases of the Kidneys.—This fact has been fully established by post mortem examinations recently made.

Ague in an Infant.—Attack first occurred when the child was ten days old; paroxysms well marked; stages well defined; type, Quotidian; mother had suffered from erratic ague for two years.

MEDICAL NEWS.

The Savannah Journal of Medicine will be issued at Savannah, Ga., January, 1866. It will be a bi-monthly of 72 pages, at \$4 per annum in advance. Editors—Juriah Harriss, M. D., James B. Read, M. D., J. G. Thomas, M. D.

The Medical and Surgical Monthly, to be published at Memphis, Tenn. The first number will appear January, 1866. A monthly of 64 pages. Terms for one year, \$6; half-year, \$4. Editor—Frank A. Ramsey, A. M., M. D.

Medical Prize—Expectant Medicine.—One hundred dollars have been placed in the treasury of the Massachusetts Medical Society, to be offered by the Councillors as a prize for the best dissertation on the following subject, the award to be made by a committee consisting of the President of the Society and four Fellows named by him:

“Expectant Medicine—the extent to which it is practiced at the present day, and the modes in which it is disguised or counterfeited.”

Essays must be forwarded to the Chairman on or before October 1st, 1866, each with a sealed envelope containing the name of its author, in the usual way.

AUGUSTUS A. GOULD,

Chairman of Committee.

Boston, October, 1865.

In accordance with the above announcement, the following commit-

tee has been appointed, namely: Dr. Henry J. Bigelow, Dr. Samuel L. Abbott, Dr. Calvin Ellis and Dr. David W. Cheever.

Wm. Warren Green, M. D., Professor of Surgery in Berkshire Medical College, has recently been appointed to the same chair in the Medical School of Maine, in place of Professor Conant, deceased.

Richmond Medical College.—This institution has been formally opened. Professor R. C. Coleman, one of the faculty, delivered the opening address. The medical profession was largely represented.

Government Hospital Patients.—The number of sick and wounded in the government hospitals throughout the country is less than five thousand. Eight months since there were over one hundred thousand patients.

New Orleans School of Medicine.—The sixth annual course of lectures will be opened in this school on the 13th of November. The following constitute the faculty: E. D. Fenner, M. D., Professor of Theory and Practice; D. Warren Brickell, M. D., Professor of Obstetrics and Diseases of Women and Children; Samuel Choppin, M. D., Professor of Operative and Clinical Surgery; C. Beard, M. D., Professor of Principles of Surgery; J. L. Crawcour, M. D., Professor of Chemistry and Legal Medicine; Howard Smith, M. D., Professor of Materia Medica and Therapeutics; A. C. Holt, M. D., Professor of Physiology.—*Medical News and Library.*

A Prize on the Vaccino-Syphilitic Question.—The Medico-Chirurgical Society of Bologna (Italy) offers, for 1867, a prize of £20 on the following question: Determine, by facts, whether the vaccine virus may or may not transmit syphilis.—*Lancet.*

New York Obstetrical Society.—The yearly election of officers for 1866 was held October 17th, and the following gentlemen elected: T. G. Thomas, M. D., President; Charles Henschel, M. D., Vice-President; John G. Percy, M. D., Recording Secretary; Abraham Jacobi, M. D., Corresponding Secretary; Nessenden N. Otis, M. D., Treasurer.

College of Physicians and Surgeons, New York.—Dr. T. G. Thomas has been recently elected to fill the chair of Obstetrics made vacant by the death of Prof. C. R. Gilman.

University of Virginia.—This institution is in successful operation.

EDITORIAL.

Salutatory.

Omnibus, ad quos hae litterae pervenerint, salutem.

In entering this field, we stand upon fertile and inexhaustible soil; a soil boundless in its vast areas and wonderful in its infinite variety. Its complex paths show the impress of the multitude who have carefully threaded its intricacies, and its teeming granaries bear silent, yet eloquent testimony, to the rewards of its patient and successful cultivation.

We look around and see those who have faithfully worked here and retired, reposing in the contentment and dignity of mental affluence and moral peace. We see also the recent immigrant, with the changeless faith, born of science, steadily seeking that promised wealth which blesses alike him who accumulates, as well as him to whom it is distributed.

There is, in this vast domain, a wide and fruitful country, Southernward, whose landmarks have fallen down, whose protecting barriers, broken and in ruins, are fast lapsing to decay; whose soil, where prospering suns once developed abundant fruits, now abandoned and waste, yet giving, in the wilderness of weeds that enshroud its neglected surface, sad and silent, yet ample testimony of its measureless fertility. It is here that we propose to labor; to erect again the prostrate landmarks and to build up the fallen altars. Here it is, that we shall make patient analysis and undertake a faithful tillage of the soil; promising to consult and engage all who will contribute to its cultivation, and hoping to offer, not unacceptably, the results of the harvest, "corn from the sheaves of science," with the stubble produced to sustain it. We propose to cultivate the field of Southern Medical Journalism.

To the consumers and examiners of our future harvests, we offer a warm and earnest greeting. Some, we have known through the medium of a common friendship; others, though personally strangers, Fame has long since introduced to us, but most are old and familiar friends, endeared to us by varied memories, pleasant associations and similar labors, whom to hold as friends is our pride, our privilege and our pleasure.

To each and all we offer a cordial salutation.

Cholera.

As the members of the profession are, at the present time, particularly interested in regard to the subject of cholera, and are constantly asked for such information as may be useful and instructive, a cursory notice, *cum currente calamo*, may not be unwelcome.

Cholera first reached this continent on the 3d of June, 1832, by the brig Carricks, which sailed from Dublin for Quebec. Since that time, it has been studied and watched with all the attention the terrible importance of the subject demands.

Thirty years ago the physicians of America, in common with those of Europe, believed it to be strictly non-contagious; indeed, those who advocated a contrary view were laughed at and derided.

Since then there has been a great revolution of opinion, and the Italian, French, German and English schools, with the great body of American physicians, seem convinced that, if not always, the disease is at least very frequently contagious.

It must, in fairness, however, be stated, that there are many able, experienced and distinguished members of the profession yet disposed to advocate a contrary opinion.

It seems strange that, with the many incontrovertible and authentic statements and facts on record, there should be any one unconvinced of the frequent contagiousness of this disease; such is, however, the fact.

If the disease were non-contagious, but due to *any one of the only three causes assigned* by the advocates of non-contagion, viz: local atmospheric influence, progressive atmospheric influence or terrestrial emanations, how strange is it, that the disease should never have been seen or developed on this continent, until the arrival of the first vessel that brought the disease to these shores, and that it should have been first developed just where this vessel landed, at Quebec. Strange that it should never have been seen on the coast of South Carolina, until the arrival of the brig Amelia, in October, 1832, in a stranded condition, at Folly Island; and that the only cases on the Island were those employed about the wreck; that the first cases at Detroit occurred soon after the arrival of the steamboat Henry Clay, July, 1832, having cholera on board; that it suddenly made its *first appearance* at St. Michaels, a healthy village on the Eastern shore of Maryland, August, 1832, just after the landing of Captain Dodson, who died the morning after his arrival; that it should have first appeared among the Indians, after the interment of a cholera corpse by Indians; that it should never have appeared in Illinois until the arrival of Captain Blakeman, who had been on a visit to St. Louis, where cholera prevailed, and who died on his return; that it should never have been seen at Key West until the arrival of the Ajax (in a distressed condition), which had sailed from New Orleans, where cholera was raging, and which arrived at Key West with the disease on board, etc.

In an official letter recently addressed to the Hon. W. H. Seward, Secretary of State, by the Hon. E. Joy Morris, United States Minister at Constantinople, the following language is used:

"Whatever may be the opinion of medical men, it is evident that this disease is propagated by contagion, as it fixed itself in the locality *where the first deaths from an Egyptian man-of-war took place, and has thence gradually extended itself over the Christian quarter of Pera, etc.*"

In a special report on the present cholera epidemic, published in *The London Medical Times and Gazette*, we find "that the disease has, in no single

case, taken an overland route, but has traveled from coast-town to coast-town, *as it has been carried.*

In this history there is nothing new, but everything that is old, and, we had almost said, established. Least of all, is there anything capricious about the disorder, as some of our contemporaries are fond to say. Cholera follows the sower of it, as does wheat or any other grain, and, like wheat or other grain, it must be carried from shore to shore, and, being carried, must even, when landed and distributed, find a field prepared for it, otherwise it will not grow."

At a meeting of the New York Health Commissioners, some interesting facts were elicited on the discussion of the all-important subject, to our large cities, of the Asiatic cholera. A communication from Dr. Marsden, of Quebec, embracing a plan for keeping out cholera by quarantine, was presented and received with favor by the board. Dr. Marsden, who was formerly President of the College of Physicians and Surgeons, Lower Canada, lays down these propositions:

First—That cholera is a communicable and controllable disease.

Second—That its cause is not in the atmosphere, nor communicable through it, except by a near approach.

Third—That it accompanies human travel and human traffic.

Fourth—That it progresses only at the rate of vessels across the ocean, but never precedes them.

Fifth—That it is transmitted by clothing and effects as well as by passengers.

Sixth—That it never appears in a new locality without communication, directly or indirectly, with an infected person or place.

Seventh—That it may be arrested, like the plague, by an absolute quarantine of short duration.

These propositions, laid down by Dr. Marsden, agree with those submitted by Alexander Moreau de Jonnes, in 1831, in a report made to the Conseil Supérieur de Sante, in Paris, on pestilential cholera; and it appears also from the reports of Surgeon Tripler, of the United States army, that he had been able to control cholera by quarantine.

Dr. Sayre, who took a leading part in the discussions at the meeting of the Health Commissioners of New York, although insisting upon the enforcement of a rigid quarantine, also recognised the necessity of sanitary regulation, house-inspecting, domestic instruction in diet, clothing and cleanliness, clean streets and proper sewerage. He also controverted the idea that there is no danger to be apprehended from cholera in the Winter season, citing the fact that it had prevailed in Russia during the coldest weather.

The Constantinople correspondent of the *Medical Times and Gazette* writes as follows:

"If any one should still have entertained any doubt about the contagious nature of cholera, these must have been finally dispelled by the circumstances attending the last epidemic here, which I shortly described in a previous letter, and which were almost identical with those observed during the visitation of the same disease at the time of the Crimean war. Then the French troops who came from Algeria, where the disease devastated the country, had scarcely been disembarked at Gallipolis, when the cholera broke out amongst the people there. From this place the disease followed the French to Varna, where it decimated the inhabitants, sparing, however, the intermediate centres of population, and more especially Constantinople, with which the French had not had any communi-

cation. At a later period, a camp was formed on the heights of Maslac, the echelon of which was Yeni-keny, in the Bosphorus. This had scarcely been done, when the cholera appeared at Yeni-keny, but in no other quarter of the metropolis; it was only after some time that the disease invaded Pera, the nearest suburb to Maslac, with which the troops, lodged in the camp, had had frequent communication. Such observations as these are almost as convincing as physical experiments; they show the connection between cause and effect as clearly as it can be shown in pure science."

The *Lancet*, of October 28th, says:

"M. Cacciaguerra, a medical student attached to the St. Antoine Hospital of Paris, caught the disease while attending cholera patients, and died very rapidly. Several other students are lying ill, stricken by the epidemic. We learn that M. Mocquot, one of these excellent young men, has just died. The following medical practitioners have recently died at Ancona, whilst attending cholera patients. We find the list in the *Imparziale*, of Florence, and hope, with the editor, that the Italian government will not forget the widows and orphans. In fact, nothing less than great liberality towards the relicts and the children can be accepted, by the medical body, as a recognition of the heroism of these men: Drs. Jacobi, Persichelti, Stefanini, Bruscoli, Marchetti, Piccinini, Polloni, Corbisier, Pederzoli and Bonetti.

"The death by cholera of Dr. Briard, an eminent Parisian practitioner, is also announced. In England even, as yet so lightly visited, Mr. Cooper, one of the health officers of Southampton, and Mr. McNab, the medical attendant upon the cases at Epping, above mentioned, have succumbed to the disease."

Evidence of this character can be furnished to any extent demanded, and yet there are a few physicians in most communities who state that this disease is due to local origin, to atmospheric waves, to terrestrial emanations, and to any other cause than that which is deadly to the innocent or ignorant person becoming exposed to it. The public should be taught a safer and better lesson—the true lesson, for it is the truth—that cholera is often contagious, and that it should be avoided. If it crosses an ocean, it is always by a *single line—the line that a cholera ship has traversed*; by land it is found on steamboat and railroad lines, and then spreads, from these, throughout the country.

There is no greater fallacy than the popular idea that cholera travels Westwardly. It traveled from Jessore to Canton, which is 1,500 miles East of Jessore, in a very short period. Other proofs of the fallacy of this wide-spread conviction could be easily furnished.

In regard to quarantine, unless a city is surrounded by water and has no railroad connections with other cities, it is useless to establish a quarantine for any other vessels than those *known to have the disease on board*. The King of Prussia, with blockaded ports and a *cordon sanitaire* by land, failed to exclude cholera from his dominions. Any vessel, however, known to have cholera on board, should be rigidly quarantined.

Though cholera will prevail where there is strict cleanliness of place and person, its whole history teaches the imperative necessity of having municipal cleanliness strictly enforced. In Brussels and Boston, and a few other cities where there was a rigid enforcement of hygienic laws, the disease disappeared after a few days; whereas, at Calcutta, New Orleans, Havana, Tampico and other places, where these precautions were neglected, the diseased raged with great malignity for many months. In

a recent report by a Committee on the present Cholera Epidemic, we are informed that, "in the progress of the disease, in no other place has there been anything like the terrific ravages as in Constantinople, notoriously the most filthy city in Europe." The average duration of cholera in large cities is about ten weeks. In five weeks it usually reaches its climax, and then in a similar period declines and passes away.

The results in this connection are, however, much modified by the cleanliness of cities, and as it is not improbable that portions of our country may soon be visited by this terrible scourge, it is proper for all members of the profession, through the daily press, to impress upon responsible authorities the vital importance of a thorough and prompt system of municipal cleansing and purification.

When cholera reaches a city, all should use extreme precaution. If reckless in regard to themselves, it should be remembered that, in a disease often contagious, imprudence on the part of one endangers the safety of an entire community. There is, too, this peculiarity in regard to cholera, that if one be exposed to its poison, but avoids all of those causes that precipitate the disease, there will, almost invariably, be an entire escape, or, if the disease be manifested, it will be in a modified and benignant form.

The general precautions in this connection to be observed are, to wear flannel next the skin; to keep the feet dry and warm; to adapt the clothing to the temperature; to avoid night air; to be strictly temperate in eating and drinking; to guard against an inordinate indulgence of the depressing passions; to remove carefully all sources (animal or vegetable) of noxious effluvia; to abstain from the use of those so-called cholera preventives, that are thrown upon the market by weak, ignorant or dishonest men. Personal cleanliness should be strictly observed, and excessive eating, or meals late at night, ought to be rigidly avoided. Intemperance in drinking is specially dangerous. Fatigue, either mental or physical, and long fasts, are frequently the immediate causes of fatal danger.

The articles of diet to be specially avoided are, in the vegetable kingdom, melons, apples, peaches, cherries, green corn, cucumbers, cabbages, turnips, etc.; and in the animal kingdom, all kinds of shell fish, such as oysters, crabs, lobsters, clams.

There are many articles which can be safely eaten: these are beef, veal, mutton, lamb, poultry, salted meats and fish; canned meats, bread, rice, beets, good potatoes, etc.

Dangerous articles of vegetable and animal food should not only be interdicted, but such measures should be taken by municipal authorities as will place it beyond the power of the ignorant, the foolish and the reckless to endanger the lives and happiness of an entire community by the use of proscribed diet.

As the emanations from a cholera corpse are dangerous, public funerals should be avoided, and those at the houses of the deceased should be attended by as few persons as possible. The dead should be buried as soon as it is known that death has really occurred, and no delay should be allowed further than that absolutely necessary to make the usual preparations. As few as possible should go to the cemetery, and the houses after death should be promptly disinfected by thorough ventilation, fumigation, etc.

It is, of course, evident that the sick, whether in hospitals or in private

houses, should be treated in separate rooms, and that as few as possible should be allowed to visit them. As one attack of cholera frequently produces future immunity, the nurses selected should, as far as practicable, be those who have already had this disease.

No one should take medicine as a preventive, for it is apparent to any reflecting mind, that when the system is sufficiently well balanced to perform its functions well, it is already in the best condition to resist the effect of all injurious agents.

While cholera is one of the most deadly of diseases, after it has been fully developed, in its incipient stage it is manageable; as much so as many diseases that occasion no alarm whatever. It should be recollected that even in the stage of collapse the case is not hopeless; for recovery sometimes takes place when this stage has been reached. Let it also be remembered, that the patient is usually in the possession of his mental faculties (even when apparently otherwise) to the last, and nothing should be said or done or omitted that may depress, distress or alarm him.

Above all things, let it be remembered that this disease is often contagious; that its introduction should be guarded against by quarantining every *cholera vessel* arriving; that its future dissemination should be anticipated and prevented by a thorough and persistent cleansing of every city; that the members of each community should be taught by the press that public as well as private safety depends upon individual prudence, not only in avoiding all sources of cholera poison, but those causes which give to it its poison its most deadly malignity.

More recent views in regard to the treatment of this disease have attracted some attention; though it cannot be said, from all which has been reported, that there has been any reliable or positive progress in our general knowledge in regard to its etiology, pathology or treatment.

When we take into consideration the fact, that a rapid exosmosis of the fluid portion of the blood is a pathognomic symptom of cholera, it is but rational to conclude that the derangement of the entire sympathetic or organic system of nerves is the true theory of its pathology, and that stimulus directly or indirectly applied to these nerves is the most reasonable basis for all relative hopes or experiments in therapeutics.

There is another reason for believing that, in an impaired or irregular action of the sympathetic system of nerves is to be found the probable pathology of this disease, and this reason is, that the reflex actions which are propagated from the internal organs, through the sympathetic and cerebro-spinal system, to the voluntary muscles and sensitive surfaces, produce cramps of the muscles, with more or less impairment of cutaneous circulation and sensibility. We have thus, in the rice water discharges and the constantly recurring cramps, the coincident results of a similar cause.

These views are, of course, entirely speculative, for if the pathology of cholera bears any relation whatever to the action or inertia of the sympathetic system, it must, *ex necessitate rei*, remain forever obscure and incomprehensible.

If experiments, performed on the sympathetic system of an animal in health are vague and unsatisfactory, how much more so must be the relative experiments or deductions in regard to the sympathetic system of an animal in disease.

The success of any treatment addressed to the sympathetic through the spinal system of nerves, can thus be understood, and it is evident that any

benefit derived from the multifarious applications, heat, ice, etc., to the spine, can only be explained from the fact that, in this way, the sympathetic system is more directly and easily reached.

The rapid introduction of water into the system by allowing the patient to drink freely of liquids or medicated diluents, and the application of the wet sheet or blanket to the entire person with the same view, have been plausibly suggested, as but proper and rational means for restoring the serum of the blood which, by the various outlets, has been removed from the circulation. This last treatment, in the obscure pathology, the unknown etiology and the inefficient therapeutics of, this disease, is entitled at least to respectful consideration.

Cholera is now on the march. Appearing during the past few months in Egypt, it has progressed rapidly throughout the cities and towns of the Mediterranean. It has visited the large seaports of France, and has made its appearance in England. The first vessel, with this disease on board, has at length reached American waters, and though, by a rigorous and commendable system of quarantine, it has not yet effected a lodgment, none but the hypersanguine expect that we shall escape its ravages.

Should the disease appear, let us have done all that is prudent and right, both in justice to ourselves and to those communities having business connections with us; and should it not manifest itself, we will, in addition to the pleasure of escaping this great scourge, have the welcome satisfaction of feeling, that without panic we had prepared to meet it like men.

It would be well for all communities to be taught, during an epidemic, partial or complete, of cholera, that diarrhœa is the characteristic, prodromic symptom; that, under such circumstances, the patient should prudently avoid both danger and hyper-medication, by going to bed and remaining there, under careful treatment, until this symptom has *entirely disappeared*. In a cursory article of this kind, nothing further will be said in regard to treatment, than that there is no specific or specially successful mode of management accepted or believed to be worthy of uniform adoption. Let each case be treated *per se*.

Forty-eight years have now elapsed since the cholera first made its appearance at Jessore, in India, and since that time few portions of the civilized world have escaped its ravages. Its history may now be read in the literature of every language, and the epitaphs of every churchyard furnish, in part, the record of its universal mortality. The Mandarin of China, in the haughtiness of aristocratic power, and the Pariah of India, in the humility of irredeemable degradation; the nomadic Arab, in the wild freedom of his desert, and the beautiful Georgian, in the gilded slavery of her Turkish home; the proud Hidalgo of Spain and the Sybarite of Italy; the Russian, in the cold splendor of barbaric power, and the Greenlander, in all the repulsiveness of physical deterioration and mental obscurity; the polished courtier of France and the wise statesman of England; the soldier of every crown, and the defender of every flag that marks a nationality of the Eastern continent, have each been called upon to enter the fatal lists of this all-conquering gladiator: after one helpless embrace being hurried away to swell the number of his melancholy victims, and to take their places in the dark recesses of his omnipresent charnel-house. On the Western continent there has been but another chapter added to his gloomy history: the poor savage has left a wretched home, in his yearly-decreasing territory, for the traditional hunting-grounds of his fathers, and hecatombs of these dusky warriors have joined their treacherous visitor in the wild dance of death; while from Maine to

Mexico, from Oregon to Florida, and Virginia to California, the name of this remorseless enemy is familiar in every household.

Throughout the wide area of this wonderful land, bold rivers and broad lakes roll ceaselessly and treacherously over the forgotten remains of his buried victims, and roadside stones and quiet cemeteries tell the sad story of his last coming. At the mention of this name, the heart stills its beating, while the cheek and eye give involuntary testimony to the power and ruthlessness of the great destroyer. All who have idols and love them tremble at the march of the pitiless Iconoclast, and the world looks with enforced respect upon the stage-tread of this universal Tragedy King.

The curtain has just fallen upon the last act of his new drama, and, as the stage bell rings and the curtain again rises, the auditory of the world looks breathlessly on, to learn whether the next scene will be amid the crowded capitals of Europe or on the battle-worn and blood-stained soil of America.

E. S. G.

The next number will contain a most valuable article on the Interdental Splint, with engravings, and with the history of forty illustrative cases successfully treated.

This splint is regarded as the most important contribution made, by the South, during the war, to the mechanical department and resources of surgery. It is intended for the easy and complete management of the most complex and comminuted fractures of the lower jaw, and removes from the mind of the surgeon, all apprehension in regard to the result of his treatment.

Those familiar with the extreme difficulty of satisfactorily managing this severe and intractable form of fracture, will know how to appreciate the value of this simple and efficient apparatus.

An article on cerebro-spinal meningitis, with a chromo-lithograph, exhibiting the pathognomonic lesions and appearance of the brain, after death by this disease. This drawing was made at the dissecting table, and is, so far as we are informed, the only illustrative plate to be found in the literature of this obscure and very fatal malady.

An article on cholera, from the pen of one whose reputation and enviable antecedents entitle his productions to entire respect and confidence.

There will also be a continuation of Mr. W. Fergusson's valuable lectures, (on the Progress of Surgery during the present century,) delivered recently at the Royal College of Surgeons of England. Original letters from Paris, London and New York. A continuation of the Retrospect of Medicine and Surgery during the past five years. Valuable articles in the Eclectic Department, furnishing all that is important and interesting in the current history of medicine and surgery. Reviews of recent works, with the miscellaneous news that may be of temporary interest to the profession. A prize essay, on ozone, will also be commenced, in the next number.

As it is very important to know, in advance, the size of the issue necessary for the next month, all who are not subscribers are particularly requested to send forward their names in time, if they desire to obtain future copies of the *Journal*.

The Editors respectfully ask the members of the profession to sustain them, by a prompt and general support.

New York Correspondence.

We are, of course, not at liberty to divulge the names of those who will furnish an interesting series of letters from New York; we can, however, assure the readers of this Journal that these communications emanate from those whose enviable professional antecedents and present high position entitle their productions to entire respect and confidence.

Apology for Paper.

The Editors have been disappointed in the paper sent to them. The best book paper was engaged, and on such, all future numbers of this Journal will be published.

Academy of Medicine.

A large meeting of the medical gentlemen of this city was held on Wednesday night, at the Medical College, for the purpose of organizing an Academy of Medicine.

The meeting was called to order by Dr. John Cunningham.

On motion, Dr. L. S. Joynes took the chair. The chairman briefly stated the object of the meeting, which was to form an Academy of Medicine for the promotion of medical science.

Dr. E. S. Gaillard then moved that a committee of five be appointed to prepare and present a proper constitution. The chair appointed the following gentlemen: Drs. E. S. Gaillard, J. S. D. Cullen, M. H. Houston, Charles H. Smith and O. F. Manson.

After retiring for a brief period, the committee returned and reported a constitution in most respects similar to that of the New York Academy of Medicine. This was adopted.

The title selected for the organization was "The Richmond Academy of Medicine."

The meeting then proceeded to the election of officers. Dr. Gaillard nominated the following gentlemen, who were unanimously elected:

President—Dr. L. S. Joynes.

Vice-Presidents—Drs. R. W. Haxall, F. H. Deane and O. A. Fairfax.

Recording Secretary—Dr. J. H. White.

Corresponding Secretary—Dr. R. A. Lewis.

Treasurer—Dr. J. R. Page.

Dr. M. H. Houston then nominated the following gentlemen, for the respective positions specified:

Trustees—Drs. W. A. Patterson, John Dove, B. R. Wellford, R. G. Cabell and F. B. Watkins.

Committee on Elections—Drs. J. S. D. Cullen, R. T. Coleman, W. H. Spence, F. H. Hancock and F. D. Cunningham.

Committee on Ethics—Drs. D. H. Tucker, O. F. Manson, O. A. Crenshaw, W. W. Parker and A. Snead.

Committee on Medical Education—Drs. E. S. Gaillard, H. McGuire, Howell Thomas, C. H. Smith and J. S. Wellford.

These gentlemen were all elected.

The President then appointed the chairmen of the "Sections" of the Academy, as follows:—Anatomy and Physiology, Dr. A. E. Petticolas; Surgery, Dr. James Bolton; Practice, Dr. John Cunningham; Obstetrics, Dr. M. H. Houston; Chemistry, *Materia Medica*, Pharmacy and Botany, Dr. James B. McCaw; Hygiene and Legal Medicine, Dr. James Beale.

Dr. Spence then moved that a committee of six be appointed to draft By-Laws, to be presented at the next meeting.

The following gentlemen were appointed:—Drs. Spence, Gaillard, Houston, Cullen, Smith and Manson.

After a successful and harmonious meeting, the Academy then adjourned to meet on the 21st instant, at half-past 7 o'clock P. M.

At a meeting of the Council of the Academy, Dr. Thomas L. Latimer was elected Assistant Secretary, and Dr. J. F. Harrison Librarian.

NOTICES.

To Contributors.—This Journal will be devoted entirely to the development of Medicine, Surgery and the collateral sciences, and nothing of a controversial character, personal, political or professional, will receive a place in its pages.
Science is catholic; her empire is peace.

We ask the members of the profession to report, for publication, in this Journal, the marriages and deaths occurring in their respective families. There is no reason why this custom, so acceptable in Europe, should not be adopted in America.

Notice.—The eclectic department will be one of the chief features of this Journal, and as the exchange list will be as complete as possible, there will be presented, either by republication in full or by analysis, all that is *specialty* valuable and instructive in contemporaneous American and European Journals.

Special Notice.—As one of the chief objects of Journalism is to supply the wants of its supporters, the editors of this Journal respectfully ask that its readers will, by letter, make known to them their desire for information in regard to any special subject; when, either by letter or through the pages of the Journal, all relative knowledge that is to be obtained, by reference to the columns of a large collection of foreign and domestic Journals will, with pleasure, be furnished.

Dr. James Bolton, of this city, desires to inform the members of the profession that he has a full supply of reliable vaccine virus which it will afford him pleasure to distribute. Each applicant will transmit a stamp for the prepayment of postage.

Dr. Bolton deserves much credit for his energy and liberality in this connection, and it is hoped that, through this rare opportunity, the country will be abundantly supplied.

MORTUARY.

FONTAINE, JOHN B., M. D. On the battle-field, October 1st, 1864.
PEACHY, ST. GEORGE, M. D. In Richmond, Va., December 30th, 1864.
CONWAY, JAMES H., Professor. In Richmond, Va., February 4th, 1865.
GIBSON, CHARLES BELL, Professor. In Richmond, Va., April 23d, 1865.
MOTT, VALENTINE, Professor. In New York, April 26th, 1865.
GILMAN, C. R., Professor. In Middletown, Conn., September 26th, 1865.
CONANT, DAVID S., M. D. In New York, October 8th, 1865.
MADISON, T. C., M. D. In St. Louis, Mo., November 7th, 1865.
WILLIAMSON, JOHN GALT, M. D. In Williamsburg, Va., July 12th, 1865.
GRIFFIN, SAMUEL STUART, M. D. In Williamsburg, Va., December 19th, 1864.
GALT, ALEXANDER D., M. D. In Williamsburg, Va., May 18th, 1862.
MALGAIGNE, J. F., Professor. In Paris, October, 1865.
LINDLEY, JOHN, Professor. In London, November 2d, 1865.
BREARD, M. D. In Paris.
RIDDLE, J. L., Professor. In New Orleans, September 8th, 1865.

BOOKS, JOURNALS, ETC., RECEIVED.

To Readers, Contributors, Correspondents, and Advertisers.

All communications, sent by mail, should be directed to Dr. E. S. GAILLARD, Box 199, Richmond, Va. European packages, sent through H. Bailliere, Regent street, London, or J. B. Bailliere et Fils. Rue Hautefeuille, Paris, will be safely forwarded.

It is expected, and requested, that the expenses be paid on all packages, foreign or domestic, sent to this Journal.

All contributions or papers intended for insertion, in the next number of the Journal, should be received by the middle of the month preceding.

The following Works, Journals, Periodicals, Pamphlets, etc., have been received, and will be noticed or reviewed:

The Pathology and Treatment of Venereal Diseases. By FREEMAN J. BUMSTEAD, M. D., Surgeon to the New York Eye and Ear Infirmary. Philadelphia. 1865. Lea & Blanchard. (From the publishers.)

Outlines of Surgical Diagnosis. By GEORGE H. B. MACLEOD, M. D., F. R. C. S. E. New York. 1865. Bailliere Bros. (From the publishers.) Will be reviewed.

A Treatise on Human Physiology. By JOHN C. DALTON, JR., M. D., Professor of Physiology in the College of Physicians and Surgeons, New York. Philadelphia. 1864. Blanchard & Lea. (From the publishers.)

Stimulents and Narcotics, etc. By FRANCIS E. ANSTIE, M. D., M. R. C. P. Philadelphia. 1865. Lindsay & Blakiston. (From the publishers.)

The Use of the Laryngoscope in Diseases of the Throat, with an Appendix on Rhinoscopy. By MORELL MACKENZIE, M. D., London, M. R. C. P. etc. Philadelphia. 1865. Lindsay & Blakiston. (From the publishers.)

A Treatise on Military Surgery and Hygiene. By FRANK HASTINGS HAMILTON, M. D., Professor of Surgery in Long Island College Hospital, etc. New York. 1865. Bailliere Bros. (From the publishers.)

Lectures on Orthopædic Surgery. By LOUIS BAUER, M. R. C. S., Health Officer of the city of Brooklyn, etc. Reprinted from the Philadelphia Medical and Surgical Reporter. Philadelphia. 1864. Lindsay & Blakiston.

Heat Considered as a Mode of Motion. By JOHN TYNDALL, F. R. S. etc. New York. 1865. D. Appleton & Co.

Hand-Book of Surgical Operations. By STEPHEN SMITH, M. D., Surgeon to Bellevue Hospital. Fifth edition. Bailliere Bros. New York. (From the publishers.)

Annual of Scientific Discovery for 1864. Edited by D. A. WELLS, A. M., M. D. etc. Boston. Gould & Lincoln.

On Radiation. By JOHN TYNDALL, F. R. S. New York. D. Appleton & Co.

Military Medical and Surgical Essays. Prepared for the United States Sanitary Commission. Edited by W. A. HAMMOND, M. D., Surgeon General U. S. Army. Philadelphia. T. B. Lippincott & Co. 1864.

The Physician's Visiting List, Diary and Book of Engagements for 1866. Philadelphia. Lindsay & Blakiston. 1865. (From the publishers.)

The Diseases of the Ear. By DR. ANTON VON TROELTSCH. New York. 1864. William Wood & Co. (From the publishers.)

The Students' Book of Cutaneous Medicine, and Diseases of the Skin. By ERASMUS WILSON, F. R. S. New York. 1865. William Wood & Co. (From the publishers.)

A Hand-Book of Uterine Therapeutics. By EDWARD JOHN TILT, M. D. New York. 1864. William Wood & Co. (From the publishers.)

The Essentials of Therapeutics. By ALFRED BARING GABROD, M. D., F. R. S. New York. William Wood & Co. (From the publishers.)

The Preparation and Mounting of Microscopic Objects. By THOMAS DAVIES. New York. 1865. William Wood & Co.

The Practice of Medicine. By THOMAS HAWKES TANNER, M. D., F. R. C. P. Philadelphia. 1865. Lindsay & Blakiston. (From the publishers.)

Radcliffe on Epilepsy. By CHARLES B. RATCLIFFE, M. D., F. R. C. P. Philadelphia. 1865. Lindsay & Blakiston. (From the publishers.)

The Renewal of Life. Lectures, chiefly clinical, by THOMAS KING CHAMBERS, M. D.,

Physician to St. Mary's Hospital, etc. From the third London edition. Philadelphia. 1865. Lindsay & Blakiston. (From the publishers.) To be reviewed.

The Correlation and Conservation of Forces. A Series of Expositions by Professors Grove, Liebig, Helmholtz, Drs. Mayer, Carpenter and Faraday. New York. 1865. D. Appleton & Co. To be reviewed.

Report of the Medical Missionary Society in China for 1864. Hong Kong. A. Shortrede & Co. (From Dr. J. J. Graves.)

On the Uses of Sugar and Lactic Acid in the Animal Economy. By SAMUEL JACKSON, M. D., Emeritus Professor of the Institutes of Medicine in the University of Pennsylvania.

University of Maryland. Fifty-eighth Annual Circular of the School of Medicine. Session 1865-66.

The London Lancet. October, November and December. American reprint. (See advertisement.)

The New York Medical Journal. July, August, September, October and November 1865.

The Boston Medical and Surgical Journal. Edited by SAMUEL L. ABBOT, M. D., and JAS. C. WHITE, M. D. November 1865.

The Chicago Medical Journal. Edited by DE LASKIE MILLER, M. D., and E. INGALS, M. D. October and November 1865.

London Lancet. English edition. 1861, 1862, 1863, 1864. (From a friend.)

Braithwaite's Retrospect. 1863, 1864, 1865. W. A. Townsend. New York.

The Half-Yearly Abstract of the Medical Sciences. By W. H. RANKING, M. D. 1861, 1862.

The Medical and Surgical Reporter. Philadelphia. S. W. BUTLER, M. D., Editor. July, August, September, October, November and December 1865. Published weekly. (See advertisement.)

The Eclectic Magazine. W. H. BIDWELL, Editor and Proprietor. New York. October 1865.

Catalogue of Medical Works on Cholera, in the Library of J. M. TONER, M. D. Washington, D. C. (From the owner.)

Catalogue of New Works. Lindsay & Blakiston, Publishers, Philadelphia.

Report of the Commissioners of Quarantine. Albany, New York. 1865. (From Dr. T. G. Thomas.)

London Quarterly Review. Edinburgh Review. Westminster Review. North British Review.

Medical College of Virginia. Catalogue of Session 1865-66. Announcement. (From the Dean.)

Annual Circular of the National Medical College—Medical Department of Columbia College—Washington, D. C. (From the Dean.)

Catalogue of Medical Books. For sale by William Wood & Co., Publishers, Booksellers and Importers, 61 Walker street, New York. (Will be gratuitously furnished to all.)

Catalogue of an Importation of New and Standard English Medical Books. Just received by William Wood & Co., New York.

Buffalo Medical and Surgical Journal. Edited by JULIUS T. MINER, M. D. November 1865.

American Druggists' Circular. New York. S. V. Newton. December 1865.

Catalogue of the Officers and Students of Yale College, 1865-66.

Hammond on Wakefulness. Philadelphia. 1866. J. B. Lippincott & Co. (From the publishers.)

Report of the Pennsylvania Hospital for the Insane. 1864. By THOMAS S. KIRKERIDE.

The Cincinnati Lancet and Observer. Edited by EDWARD B. STEVENS, M. D., and JOHN A. MURPHY, M. D. December 1865.

Lectures on Inflammation, under the bequest of Dr. Mutter. By JOHN H. PACKARD, M. D. Lippincott & Co. 1865. (From the author.)

The Mechanical Treatment of Angular Curvature of Rott's Disease of the Spine. By CHARLES FAYETTE TAYLOR. New York. Bailliere Bros. 1865. (From the author.)

Transactions of the Twentieth Annual Meeting of the Ohio State Medical Society. (From Dr. E. B. Stevens.)

Introductory Lecture before the New Orleans School of Medicine. November, 1865. By Prof. E. D. FENNER. (From the author.)

Researches on the Medical Properties and Applications of Nitrous Oxide. By G. J. ZEIGLER, M. D., etc. Lippincott & Co. Philadelphia. 1865. (From the author.)

ILLUSTRATIONS OF THE INTERDENTAL SPLINT.

Fig. 1.



Fig. 2.

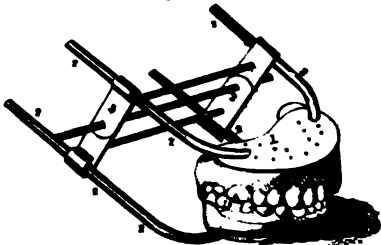


Fig. 1.

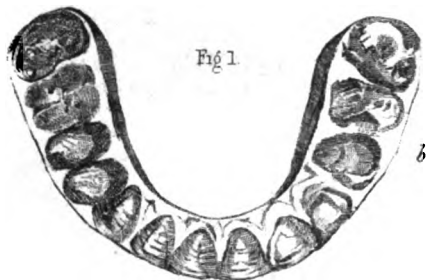


Fig. 3.

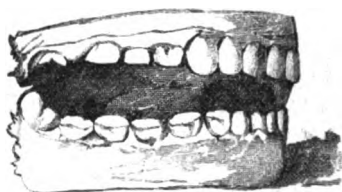


Fig. 5.

Fig. 4.

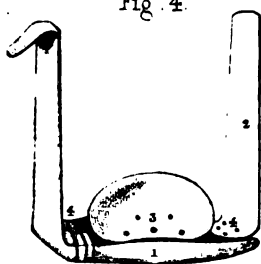
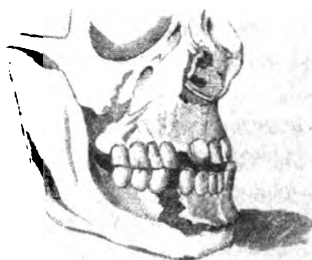


Fig. 6.



Fig. 7.



THE RICHMOND MEDICAL JOURNAL.

FEBRUARY 1866.

ART. I.—*The Interdental Splint.* By E. N. Covey, Medical Inspector in the late Confederate Army.

I desire to call attention to the treatment of fractures of the maxillary bones, according to the method originated by J. B. Bean, D. D. S., of Atlanta, Georgia, and adopted by him, with the most satisfactory results, during the latter portion of the late war.

The frequency of this class of fractures in military surgery, and the almost total want of success among surgeons, with the treatment usually adopted, render this plan (perfect as it is, and attended with such happy results) one of special interest. To its uniform success I take great pleasure in calling the attention of the profession.

During the month of June 1864, I found Dr. Bean visiting the hospitals at Atlanta, Georgia, giving his services gratuitously. At this time he explained to me his method of treating fractured jaws by the instrument described in this paper. It appeared to me so plausible, and at the same time so simple, that I took the responsibility of getting him materials, and of directing that all the cases at Atlanta should be sent to one hospital for his treatment. This was done, and with such good results that after the fall of that place, I directed that a ward should be opened in one of the hospitals at Macon, Georgia, to which all the cases in the hospital department of that section should be sent. Very soon over forty cases were collected, and were treated with the most perfect success.

The history of this class of fractures has heretofore brought as little honor to the profession as it has benefit to the patient; and so far I think we have looked, in vain, for the proper means of treatment.

The appliances used by our most distinguished surgeons have usually consisted of ligatures, splints, bandages and slings. The use of ligatures of gold and silver wire, from the days of Hippocrates (who first recommended them) to the present time, has been very unsatisfactory, even in civil practice, and almost entirely useless in military surgery. In almost all instances, so much injury is done to the teeth that the application of wire is rendered impossible.

The various splints, from that first recommended by Paré, to the clamp, invented by Mütter, have all been used, with varied and unsatisfactory results, being in time discontinued, as failing to effect the desired object.

The different clasps, used by Chopart and Desault, as well as those more lately employed by Bush, Lonsdale, Malgaigne and others, have fallen into disuse. Recently the best surgeons, in this country, have adopted the bandage or sling.

Hamilton, in his work on fractures, recommends, in connection with the bandage, an interdental splint of gutta-percha; but its application, in most instances, is so difficult or defective, that but little good has resulted from its use. His method was simply to reduce the fracture, apply the softened gutta-percha to the rami, and allow it to harden. This, in simple fractures of the rami, will, in some cases, do very well; but, owing to the great difficulty in keeping the parts in apposition, in compound fractures, and in those fractures near the condyles, it has failed to be of any decided benefit. These fractures have almost invariably united with more or less deformity; consequently the antagonism of the teeth has been destroyed and mastication has been very much impaired.

Dr. Corné, a French surgeon, in 1855 invented an apparatus, which consisted of a gutta-percha splint adjusted to a band, this being fitted under the rami of the jaw with adjusting screws: he had with this apparatus some success.

Dr. N. R. Smith, of Baltimore, used, in the beginning of the late war, a silver-plated splint, with impressions for the teeth; this was made to grasp the whole length of the fractured rami, and was adjusted with a counter splint and screws under the jaw, to which it

was attached by means of a strong wire. One of these instruments I saw applied to a paroled officer, who, although he had been very carefully treated, recovered with very imperfect antagonism of his teeth and with deficient faculty of mastication.

The idea of an interdental splint is not a new one, for they have been used for a long time. Splints of wood, cork and other material have been tried, but their application did not fulfill all the required indications, in the treatment of this class of fractures.

The desideratum, in treating fractured jaws, is to retain the fractured extremities in close and perfect apposition, thus maintaining the exact antagonism of the teeth, until provisional callus is thrown out and union is effected.

The splint, constructed by Dr. Bean, fully meets these indications; and after a happy experience of over six months in its application, and with over forty cases (some of them, at first sight, apparently beyond remedy), I reasonably regard it as a very valuable improvement in surgery. The advantages of it need only to be made known, to render them fully appreciated.

The instrument consists of an interdental splint (Fig. 1) made of vulcanized india-rubber, having on both horizontal surfaces cup-shaped depressions, sufficiently deep to embrace the crowns of the teeth. In the adjustment of the instrument, the teeth are placed in their corresponding indentations in the splint, and kept in position, by the mental compress and occipito-frontal bandage, to be described. This compress and bandage have advantages over all others I have seen used.

The mechanism and construction of the instrument, on referring to the accompanying plates, will be clearly understood, by the following description:

A wax impression is taken of the crowns of the teeth of the uninjured jaw, and of each fragment, separately, of the broken jaw, as soon after the injury as the condition of the parts will permit. When, in doing this, the ordinary "Impression Cup," used by the dentists, cannot be introduced, one composed of a thin metallic plate, which is covered with wax and stiffened by a rim of wire, may be substituted.

From these impressions, are produced casts of plaster of Paris, very carefully prepared, so as to produce a smooth, hard surface, and

giving as perfect representations of the teeth as possible. These plaster models are then adjusted, properly antagonized in their normal position, and placed in the "Maxillary Articulator." (Fig. 2.)

This consists of an upper and lower plate (1) with the leaden wires (2) connecting them by an adjustable hinge joint (3), and of the plaster models (4) in place, properly antagonized.

The fragments of the model representing the broken jaw are held in their proper position and antagonism, with wax, being secured thus one to the other, and to the remaining plate of the articulator. The wax between the teeth is now pared away, that the jaws may be separated. We have thus prepared an exact model of the teeth, with a complete mechanism of the patient's jaws.

The model jaws are now opened from three to five lines, and a wax model of a splint is built up interiorly and exteriorly between the molars on each side, with a connecting strip passing behind the upper surfaces of the superior incisors; leaving an opening, extending horizontally between the cuspids, as is shown in Fig. 3. This wax model, properly fashioned and rendered smooth, with the plaster models, is now removed from the articulator, and imbedded in plaster, in the ordinary "flask" (used in the dental laboratory) for vulcanizing plates for teeth. The flask is then separated, the wax removed, and the mould packed with gum, in the usual way. It is then closed, and the gum, by heat, thoroughly vulcanized. The flask is then opened, and the splint removed, cleaned, filed to proper shape, polished, and its indentations made to conform to the patient's teeth.

The adjustment of the splint to the fracture is very simple. It is inserted into the mouth of the patient; the fragments drawn forward, and the teeth adjusted to their corresponding indentations. The jaws are then closed and held firmly in position by the application of the mental compress and occipito-frontal bandage; this prevents any displacement of the splint or motion of the jaws.

The mental compress is designed for retaining the teeth, in their indentations of the splint, by upward pressure applied to the base of the mental process, counteracting thus the traction of those muscles, which most tend to cause displacement. There is an advantage also in relieving the parts from the lateral pressure produced by the four-tailed bandage or double-cross roller bandage, generally applied to these cases.

The compress is composed of a light piece of wood (Fig. 4) which is four and a half inches in length, three-sixteenths of an inch in thickness, and one inch and a half in width, in the middle, tapering to seven-eighths of an inch, and round at the ends; to each of which is attached a metallic side-piece (2) four or five inches in length, and from three-quarters to one inch in width; also a shallow cup (3) fitting the apex of the chin. Encasing these side-pieces are the temporal straps made of stout cloth, and secured by a strong cord at the base (4) of each piece.

The occipito-frontal bandage (Fig. 5) is composed of a band (1) passing around the head, from the forehead to the occipital protuberance behind, and secured by a buckle one inch to the right of the median line behind; of another strip (2) secured to the band in front and behind; and a third strip (3) extending from the temporal buckles (4) on either side, and secured to the middle strip at the point of crossing.

The advantages of this splint are its neatness; the facility with which it allows the patients to take nourishment; the almost entire certainty of its not being displaced, and the preservation of perfect antagonism of the teeth, with the absence, consequently, of deformity after the reunion of the bones. Fig. 5 will show the splint in situ, as well as the application of the mental compress and occipito-frontal bandage.

To enable the reader more fully to appreciate the advantages of the instrument, I have transcribed the notes of a number of cases kept at the time, by Dr. Bean, which show very conclusively the success of the treatment. Many of these cases I inspected myself at Atlanta and Macon, Georgia, and can add my own testimony as to their happy results.

"CASE 12.—Private N. P. L., Co. G, 29th Alabama Vols. Vul. sclop.; fracture of superior maxilla. Wounded July 20, 1864. Admitted to Blind School Hospital July 23, 1864. Ball entered right cheek, one inch below the edge of the orbit, ranging across and backward, seriously fracturing superior maxillary and palate bones; going through the ethmoid and coming out a half inch below and somewhat in front of the meatus auditorius externus.

Superior maxilla containing incisors, cuspids and bicuspid (ten teeth in all), detached from its bony union in one piece. Patient

much inclined to sleep; seems to suffer very little pain. Nares entirely obstructed with clotted blood.

July 24—Removed fragments of bone; syringed the wound thoroughly.

August 8—Wound somewhat phagædenic; symptoms disappeared in a few days, by vigorous remedial treatment.

August 10—No union; fragment still quite loose; extensive suppuration.

August 18—Suppuration subsiding; applied vulcanite interdental splint and mental compress, with occipito-frontal bandage, forcing the fragment into its place.

September 4—Teeth in perfect position; fragment quite firm; external wounds healing, and patient much improved in general health.

September 12—Still improving; eats heartily of soft food. Furloughed for sixty days."

"CASE 16.—Private W. W., Co. D, 5th Confederate Infantry. Vul. sclop.; fracture of superior and inferior maxilla. Wounded July 21, 1864. Admitted to Blind School Hospital July 24, 1864. Ball entered about centre of left cheek, ranging backward and downward, taking all of the upper molars and a bicuspid of that side; passing through the root of the tongue and under the second and third molars, came out near the right angle of the jaw, fracturing the body of the bone at that point.

August 11—External wounds healed; teeth antagonize; no displacement.

August 20—Considerable displacement of inferior maxilla.

August 28—No indication of union as yet; displacement increasing; original antagonism of the teeth entirely destroyed.

August 29—Applied interdental splint, mental compress and occipito-frontal bandage.

September 6—Furloughed for sixty days.

November 8—Reported back to hospital; bone perfectly united, and the antagonism of the teeth as perfect as before the injury; has not been wearing the splint for some week or two past; speech somewhat impaired by adhesion, and disability of the tongue; explored the tongue, and found fragments of a tooth in right side entirely enclosed.

November 10—Made longitudinal incision in right dorsum of the tongue, and extracted half of a molar tooth.

November 20—Tongue much improved; still some adhesion."

"CASE 20.—Sergeant-Major W. B. C., 3d Confederate Infantry. Vul. sclop.; fracture of the inferior maxilla. Wounded July 22, 1864. Admitted to Blind School Hospital July 24, 1864. Ball entered near base of mental process, and to the right of the symphysis, fracturing the bone between right lateral incisor and cuspid, ranging backward and nearly horizontally, splintering the base of the body somewhat, making a small opening near the angle of the jaw; and, coursing farther back, came out on side of neck, near jugular vein; then glancing on the shoulder, caused a slight contusion.

August 10—Extricated lateral incisor; took impressions; displacement considerable; fragments pass each other; deformity of face quite extensive, caused by displacement to the right.

August 13—Applied interdental splint, mental compress and occipito-frontal bandage.

August 15—Splint well-adjusted and in place, correcting, at once, the deformity of the face.

August 29—Wound on the neck phagædenic.

August 30—Sent to Gangrene Hospital, Vineville."

"Case 34.—Private W. A. R., Co. F, 11th Tennessee Vols. Vul. sclop.; fracture inferior maxilla. Wounded July 20, 1864. Admitted to Blind School Hospital August 8, 1864. Was first sent to Vineville Hospital. Ball entered one inch and a half below the left corner of left eye, and two and a half inches in front of left meatus auditorius, ranging downward, backward and to the right, fracturing the body of the left ramus near the middle, passing down through the hypoglossal muscle, came out one inch and a half below left angle of jaw. Union had already commenced, when patient came into hospital.

August 20—Deformity of jaw considerable; left side of inferior maxilla projected upward and to the left; molars on that side touching five lines in advance of the other side, and lower incisors projecting beyond the upper left cuspid.

August 29—Applied interdental splint, mental compress and occipito-frontal bandage; teeth pressed into place with considerable force; callus already formed, gradually giving way.

September 1—Teeth in place and patient quite easy.

September 20—Antagonism of the teeth perfect, as before injury, on removing splint.

September 28—Furloughed for sixty days."

"CASE 49.—Sergeant J. L. B., Co. D, 7th Texas. Vul. sclop.; compound comminuted fracture of superior and inferior maxilla. Wounded September 3, 1864. Admitted to Blind School Hospital September 4, 1864. Minie ball entered the right cheek near the centre, and one inch in a horizontal line in front of the lobe of the ear, striking about the second upper molar. The three upper and one or two lower molars of that side being carried away, and the bone fractured between the lower molars and bicuspid, ranging downward and across the hard palate, producing considerable fracture of that bone, with laceration of the mucous membrane, and striking the molars of the other side near the line of their antagonism. All of the molars, upper and lower, of that side were carried away, together with portions of both maxillary bones.

The lower maxilla completely severed beyond the bicuspid, and large fragments detached and lying in the wound when patient entered hospital.

September 6—Patient compelled to take nourishment through a flexible tube and funnel; tongue much swollen; anterior fragment much displaced.

September 10—Removed some spiculæ of bone.

September 20—Removed other fragments of bone; no sign of union.

September 24—Applied interdental splint, mental compress and occipito-frontal bandage.

October 3—Fragments in position, and union taking place.

October 4—Splint easy and comfortable. Furloughed for sixty days.

December 8—Reported back to hospital; bone united; antagonism of the teeth perfect; no deformity; jaw not yet strong enough for mastication."

"CASE 50.—Major General J. P. A., army of Tennessee. Vul. sclop.; compound fracture of inferior maxilla. Wounded August 31st, 1864, at Jonesboro', Georgia. [Refer to Figs. 6 and 7.] Minie ball entered left cheek one-half inch from angle of jaw, one inch from

base of bone, ranging forward and to the right, producing comminuted fracture of middle portion of body, and carrying away second and third lower molars of left side. Fracture then extended along the mental process, about the apices of the fangs of the lower incisors and cuspids, horizontally, as far as the third bicuspid of right side; thence upward, between the bicuspid, separating, in one piece, the bone and alveoli containing the two bicuspid of the left side, and all of the incisors and cuspids and first bicuspid of right side. The ball, after leaving the body of the bone, near the apex of the fang of the second left bicuspid, passed upward through the side of the tongue; wounding the left ranal artery, and cutting the centre of the dorsum of the tongue (the mouth of the patient being open at the time), it passed out at the right angle of the mouth; fracturing and carrying away the crown of the superior right lateral incisor. Fragments of bone, &c. were removed on the field, and when the patient reached private quarters in Macon, Georgia, on September 3d, the wound was in good condition, hæmorrhage having subsided.

The patient was perfectly quiet; and being unable to articulate, he communicated his wishes by writing. The fragment of bone, containing the front teeth, was very much displaced, being projected forward until there was a quarter of an inch of space between the bicuspid of the right side and the lower incisors: these last closed inside of the upper teeth before the injury, but now projected beyond them for more than a quarter of an inch; it was not possible, under the circumstances of the case, to reduce this displacement, and much less to retain it in place by any means ordinarily adopted.

September 3—Tongue much swollen, and parts quite sensitive to any kind of disturbance. In consultation with Surgeons Bemiss, Gamble, Green and others, it was determined, on account of the wounding of the ranal artery, to leave the case undisturbed for a day or two longer, but in the mean time to construct the necessary apparatus for the treatment.

September 4—Tongue much swollen; patient still unable to articulate; communicates his wishes entirely by writing.

September 5—Swelling somewhat subsided; no signs of hæmorrhage; patient able to swallow milk and other liquid food with comparative ease; made wax-impressions of upper teeth, and of each fragment separately of lower jaw.

September 6—Patient still improving, yet no disposition to a self-adjustment of the fragment; made proper measurements, and proceeded with the manufacture of the splint.

September 8—Some small spiculæ of bone removed, and the position and condition of the fragment carefully examined. The surgical treatment being entrusted to Surgeons Bemiss and Lundy, but little notice was taken of the symptoms.

September 10—Applied interdental splint, and found the displacement of the lower fragment so great, that the teeth could not be made to occupy their places in the splint. The fragment being quite movable, it was lifted and forced somewhat outwardly, and the tube of a syringe introduced between the bicuspid of the right side and the fracture. The wound was then carefully but freely syringed with tepid water, in order to remove the debris that was supposed to be interposed between the apices of the fangs of the teeth and their respective positions in the lower fragment. By carefully introducing a curved instrument (an aneurism needle) between the bicuspid on the right, and another beyond the bicuspid on the left, the fragment was then lifted upward, pressed backward, and forced into position. The splint was then applied, the teeth forced into their places, and the whole confined, by means of the mental compress and the occipito-frontal bandage. This operation caused some pain to the patient, but it was by no means severe.

September 11—Teeth are well-adjusted in the splint and are in perfect position; patient quite easy, and able to imbibe liquid food with facility.

September 15—Swelling very much subsided; external wound healing.

September 20—Fragments in perfect position and not at all displaced, on the removal of the splint.

September 28—Patient left Macon.

November 1—The General called, and I find the fragment perfectly united and the patient able to use the teeth, these being quite firm; no deformity exists, and speech is but little impaired; external wound scarcely noticeable; artificial substitutes, for the lost teeth, will doubtless entirely restore the speech."

I wish to call the attention of the profession especially to the case of Major General A. An examination of the Figs. 6 and 7 will

show, very accurately, the nature and extent of his fracture, which has united with such little deformity, and with such perfect antagonism of his teeth, that the closest inspection does not detect that his inferior maxilla had ever been broken.

ART. II.—*Cholera*. By M. H. HOUSTON, M. D., Richmond, Va.

Cholera, once more, attracts the attention, and excites the fears of the civilized world. The approach of a disease so fatal, should arouse all the talent and energy of our profession, to prevent its access if possible, and if not to moderate its extension and mitigate its severity, when it does make its appearance.

My present object will be, not to attempt a systematic treatise on the subject, but to present such salient points, and discuss such general principles, as will lead to practical results.

The history of cholera corresponds very closely with that of most other great epidemics. Like the comet, it has its cycle, and encircles the earth, very much in the same track, once every sixteen or eighteen years. Like some monstrous bird of prey, it nestled for years about the mouths of the Ganges, pluming its wings, and testing their strength, by occasional flights, until at last, conscious of power, it winged its course over continents and oceans, when, its circuit completed, it returned to its nest in the East, there to rest for a series of years, and again prepare for its mission of Death. Traversing great rivers, overtopping the highest mountains, and crossing the widest oceans, it everywhere defied and scorned the feeble efforts of man to stay its progress. In every region of country traversed by the shadow of its wings, it left the fatal marks of its passage, and wherever, enticed by the abundance of food, prepared for its sustenance, it tarried for a season, a carnival of death was speedily inaugurated. Whether assisted by favorable, or opposed by adverse winds, whether resting in sunshine or breasting the storm, its course was still onward; breaking through all barriers and penetrating every stronghold, designed by the ingenuity of man, for its exclusion.

In considering the history of such a disease, the first important

questions which present themselves are, first, What is its cause? and second, How is this cause propagated?

In answer to the first question, various hypotheses have been offered, but no one of them is rendered even probable, much less certain by any weight of testimony, or any demonstrable facts. They are all alike unsatisfactory; and it is to be feared that the mystery of its essential cause can never be revealed. Some have attributed it to animalculæ, others to different species of fungi, whilst still others have imagined it to be caused by the absence of ozone from the atmosphere. These different hypotheses are mentioned, not for the purpose of refuting any one of them, but merely as an illustration of the obscurity which attends the subject. Whilst the essence of the poison may never be determined, we can yet reach a reasonable conclusion as to its mode of propagation, by carefully observing and analyzing the facts connected with its history.

And first, is cholera a contagious disease? This question has divided the profession, and very properly elicited many facts, and much able discussion on both sides, as upon its determination depend many points of the first practical importance.

The propagation of animal poisons, universally acknowledged to be contagious, seem to be governed by different laws, in different diseases. In gonorrhœa actual and intimate contact, with purely local development of specific inflammation, constitutes the general rule. In syphilis and glanders, intimate contact, followed by absorption of the poison, and its reproduction within the blood, giving rise to local manifestations of constitutional disease, furnish some of the laws which govern their propagation. These, and many others which may conform to the same general laws, constitute a class of purely and exclusively contagious diseases. No one would contend that cholera belongs to this class.

There is another family of contagious diseases, governed by certain uniform laws, to which must be accorded a wide latitude. In this are included small-pox, chicken-pox, measles, scarlatina, and some others. Of this class, Watson, in his *Practice of Medicine*, says: "Like different human faces, all the complaints belonging to this group, have the same set of features, and therefore a mutual resemblance; while the separate lineaments differ so much, in their character and relative circumstances, as to give to each disease its

distinctive aspect." It will be necessary to describe some of these features, in order to determine whether cholera presents them, and consequently whether it is to be included in the same category.

First.—The diseases of this class are capable, at *all times*, of being extended by individual contact or proximity. The distance at which the poison thrown off from one body, will affect another, no doubt varies with varying circumstances. In small-pox, the most contagious of the class, with a cool, pure atmosphere, it is ascertained to be very limited.

Second.—The poison of these diseases has the property of reproduction within the living system. They are called by authors, emphatically, *blood-diseases*, and as such, have *well-defined periods of incubation*. The shortest time allotted to this period, after exposure, is seven, and the longest fifteen days. If disease be developed either before or after these periods, it is deemed safer to infer an error in the date of exposure than to shorten or lengthen the period of incubation.

Third.—These diseases, when not fatal, pass through regular stages, in definite periods of time, to a steady convalescence. We have the chill, the three days' fever, the time for the maturation, and the time for the decline of the eruption, and finally the throwing off of the effete poison, and the end of the disease.

Fourth.—All diseases of this class pass through these stages, in despite of any effort made to cut them short, by the resources of our art. So universally is this law recognized by the profession, that any physician, who should attempt to cut short any one of them by the use of heroic remedies, would be considered as trifling with the lives of his patients.

Fifth.—Added to the property of reproduction within the blood, these poisons have also the property of propagating themselves through the atmosphere, under certain unknown conditions, and of thus becoming epidemic. This would seem to constitute them a connecting link between the exclusively contagious, and the exclusively epidemic diseases.

Sixth.—When not epidemic, these diseases spread gradually from some centre, and affect equally the most of those exposed to the contagion, unless they enjoy the protection of some prophylaxis.

Seventh.—With but few exceptions, in diseases of this class, one

furnishes immunity from any subsequent attack. Those who have the pits of small-pox reflected from their mirrors, seldom fear to become nurses to persons laboring under the disease.

Eighth.—Complete isolation of the sick effectually prevents the extension of these diseases, whilst the neglect of this precaution insures their indefinite propagation. By successive individual exposures, a dozen subjects may extend the disease through more than a hundred days. Immunity is not secured by change of atmosphere, varying seasons of the year, different periods of life, or strength of constitution.

These are some of the prominent and uniform laws, known to regulate the propagation of this family of poisons. It remains to discuss the question, whether cholera, tried by these rules, will stand the test of a contagious disease.

As was before stated, cholera lingered, for a number of years, about the mouths of the Ganges, before it asserted its empire over the world. During these years, the ordinary channels of trade were unrestricted, and the same facilities existed for propagating the disease by contagion, that were found at a subsequent period, and yet it maintained its endemic character. Having once thrown off this character, it did not spread gradually in every direction, but taking a northwesterly course, it affected thousands of persons, almost at the same time, in every city and country through which it passed. In this general course it continued to go until it encircled the whole earth. Some peculiarity in the atmosphere seemed to be necessary for its propagation, and wherever this existed continuously, there was to be found its steady line of march.

But it has been stated, as an argument in favor of contagion, that the disease follows closely the line of communication between different countries, and between different points of the same country. This fact, which is admitted to be true, proves nothing in favor of contagion; it only adds color to the view of its propagation through an atmospheric medium. Until the introduction of railroads, the great lines of communication were the rivers, navigated by steamboats, and the oceans and inland seas navigated by vessels of large size. To say nothing of such rivers passing through the richest and most densely populated portion of each country, thus generating an impure state of atmosphere generally, these large vessels are ordina-

ly the receptacles of dirt, and the abodes of a crowded and filthy population. Nothing is more natural than that a disease, propagated by atmospheric infection, should be found to travel along such channels.

But has cholera ever been communicated by contact alone? Many facts have been adduced to prove that it can be, but such facts, as they have fallen under my observation, were all explicable upon the principle of atmospheric infection; and as there are much more abundant facts which cannot be explained upon the supposition of contagion alone, these ought at least to have due weight in the settlement of the question. Having witnessed all the epidemics of cholera which have prevailed in this country, I shall confine myself mainly to facts which fell under my own observation.

Late in the fall of 1832, there occurred in the lower part of the city of Wheeling a few cases of what was believed to be true Asiatic cholera. They all appeared about the same time, and in persons between whom no possible communication could be traced. All of them proved fatal, having occurred in persons whose constitutions were broken down by intemperance. They were attended, as usual, both by nurses and physicians, and yet there was no extension of the disease. Cold weather set in, and nothing more was heard of cholera during the winter. All lively fears were allayed, and the city fathers relapsed into their usual state of quiet indifference. Now, upon the supposition of communication by contact alone, could it possibly have happened that not one of all those who attended, nursed and buried those who died, was attacked by the disease? But it may be asked, why, if the disease were caused by an atmospheric poison alone, did it not equally produce the disease in others who were exposed to it? The answer is plain; simply because the poison had been propagated to a limited extent only, and was not sufficiently concentrated, to produce its deadly effect, except on such as were strongly predisposed, by previous bad habits.

About the 15th of May 1833, the weather being damp, warm and oppressive, a few isolated cases of the disease made their appearance in the vicinity of the market square, which was at the time in a very filthy condition, and which was some squares distant from the point where the disease existed the fall previous. Two days afterwards a gentleman of high social and professional standing, was seized in a

different part of the town and died in a few hours. From that time forward the number of cases increased rapidly, and the whole city became the theatre of its ravages. This sudden outbreak, and rapid spread of the disease, are not consistent with the rules laid down as characterizing the spread of contagious diseases. But numerous facts were observed, during the prevalence of the epidemic, which proved the disease to be non-contagious. Many persons fled from the city, after the epidemic had fairly commenced, in order to secure some place of safety. Numbers of these sickened and died, within a few hours after their departure, and in no instance could it be ascertained that the disease was communicated to those brought in contact with them. A memorable instance attracted very general attention at the time. An eminent member of our profession, in the prime of manhood, and in the enjoyment of excellent health, came from an interior town of Ohio, to familiarize himself with the disease, and prepare for its more successful treatment in the event of its reaching the place of his residence. He remained in the city eight or ten hours, during which time he became so shocked by the scenes of suffering and death which surrounded him, that he determined to return to his home without delay. He reached a small, healthy, very elevated village, that night, where he sickened and died before noon of the next day. He received every kindness and attention which the citizens could afford, and yet no other case of cholera occurred in the village.

Another fact, in this connection, was generally observed, and freely commented on, after the disappearance of the epidemic. The ratio of those attacked, in proportion to the whole number engaged, was much less among those actively employed in nursing and ministering to the sick, than among those who, from fear or other causes, carefully avoided the presence of the sick chamber. There was no death among the physicians, and most of them escaped entirely an attack of the disease. Are these facts reconcilable with the uniform laws of contagion? I think not.

Has cholera a *definite* period of incubation? Is there any fixed time after exposure, before the development of the disease? Has the poison the property of reproduction within the blood? These questions are all of the same import, and are equally negatived by the facts just stated. In the case of the medical gentleman men-

tioned; he came from a healthy locality, was exposed during a few hours only, to an atmosphere loaded with the poison; had his susceptibility highly exalted by the combined effects of alarm and fatigue, and returned to a perfectly healthy locality, there to die within a very few hours. There was certainly not such a period of incubation, in this instance, as characterizes the strictly contagious poisons. In numerous instances persons who came from healthy localities in the surrounding country, and spent the night in the city, were seized with the disease in less than twenty-four hours. With such facts before us, we must conclude, either that the poison of cholera is reproduced within the blood much more rapidly than in other contagious diseases, or that it is not reproduced at all. That it is not so reproduced is proved by other facts connected with the history of the epidemic. Many nurses who were in daily contact with those laboring under the disease, for weeks at a time, did not take it at all, or escaped until their susceptibilities were exalted by fatigue and loss of sleep. To reconcile these facts, we must suppose, either, that the period of incubation extended from a few hours to as many weeks, or that during these few weeks the blood itself acquired some property, favoring the reproduction of the poison which did not exist in the beginning. If the Doctor, without any prophylaxis, had gone into the midst of an epidemic of small-pox, and remained for a few hours, he would have returned home with a certainty that he would not sicken until the ninth or tenth day, and almost with an equal certainty, that, at the end of that time, he would be attacked with the disease. So with the nurse, it would seem to be impossible that he could be constantly exposed to the contagion of small-pox, during many weeks, and not contract the disease, until nearly the end of that time. In the class of contagious diseases, now under consideration, a period of several weeks cannot be allowed for incubation, nor can it be limited to a few hours. It might safely be considered an absurdity to say that the period can vary, in any one of these diseases, from eight or ten hours to as many weeks. We think then it may be fairly asserted that cholera, unlike the contagious diseases of this class, has no definite period of incubation, and that the poison which causes it, does not possess the property of reproduction within the living system.

Again, does cholera run through any regular stages, either to death

or convalescence, or can it be arrested in its progress by the appliances of our art? In contagious diseases, when once contracted, nothing can put a stop to their regular course. The best a physician can do, is to guide his patient safely through the disease, like a frail bark through the rapids of a stream, keeping the open channel and avoiding, with all due diligence, the rocks and shoals which endanger his passage. The reverse of this is pre-eminently the case with cholera. The whole history of the disease proves that, by proper care and management, it can be almost always cut short in the first, or commencement of the second stage. In hundreds of cases, which fell under my own observation, the disease was arrested and the patients restored to their usual health in a very few days. When thus arrested, there were no *sequelæ* to the disease—none of the results of congestion which showed themselves in those who were so fortunate as to recover from the third stage. They all returned to their usual occupations as soon as persons recovering from a slight attack of any ordinary indisposition.

It may be as well to state here that one attack did not furnish protection against subsequent attacks of the disease. In some, who exerted themselves too soon, relapses took place, but, in many instances, some weeks intervened between the attacks. This is inconsistent with the idea of contagion, as before laid down, and is, in itself, almost conclusive against the doctrine of contagion.

Does cholera, commencing at one point, spread gradually, and show itself in those only who have been exposed to contact with the sick? The history of the disease proves the contrary to be true. We have before stated that the disease appeared simultaneously in different parts of the city, and in persons between whom no possible communication could be traced. The same statement will apply to all those places where in 1832-33 the cholera committed its most fearful ravages. Its access was uniformly sudden, its spread rapid, and its continuance of limited duration. A remarkable fact, connected with the history of the disease in Wheeling, bears directly on many of the points connected with this discussion.

At the distance of half a mile, and separated from the city, by two branches of the Ohio river and an island, the shores of which were clothed with trees, is situated the small village of Bridgeport. At the time in question it was in a very filthy condition, and contained

only two or three hundred inhabitants. The two branches of the river were crossed by ferry-boats, which transported all the travel on the great national road. Although very much restricted by the fear of cholera, yet more or less communication was constantly kept up between the two places. The disease commenced in Wheeling about the 15th of May and continued until the first week in July, and yet it was not until the last week in June that it made its appearance in Bridgeport. The disease broke out in the night, and during the next thirty-six hours, not less than twenty-two of the inhabitants were numbered among its victims. When visited at the end of that time by the benevolent citizens and physicians of Wheeling, not enough of the inhabitants were left in the place to attend to the wants of the sick and bury the dead. They had all taken refuge in the country.

Now, can such facts as these be accounted for on the principle of contagion alone? Why, if the disease were contagious, was it not sooner conveyed by the constant intercourse, between the two places, carried on during five or six weeks, and why, when it did cross the river, did it strike down, at one fell swoop, not less than a tenth part of the whole population? Contagion travels by slower and more measured steps, and is never guilty of such violent freaks as this.

But has cholera ever been extended, during indefinite periods, by the successive contact of individuals? As far as my knowledge extends, this question must be answered in the negative. The rule is that its access is sudden, that it rages like a tempest while it lasts, and, that having exhausted its power, its exit is as sudden as was its advent. Once gone, all fear of its speedy return may reasonably be dismissed. Those who had fled from their homes returned with perfect security, and hundreds of houses once haunted by the pestilence were entered, and thousands of garments, but recently enclosed in its embrace were handled, by the returned refugees, and yet not one of them suffered from an attack. Are these facts consistent with the doctrine of contagion? A single instance may be worthy of mention. The question of contagion or non-contagion was, at the time, very generally discussed. A fool-hardy editor of one of the Wheeling newspapers, in order to prove the non-contagiousness of the disease, had the filthy temerity to sleep or lie all night, in the berth of a steamboat—wrapped in the same bed-clothes, which en-

veloped a man, who had died the same evening of cholera. He escaped every symptom of the disease, although he suffered all the terrors of intense fear, during several subsequent weeks. Here was a man exposed, under all the circumstances known to favor the propagation of contagious poisons, and yet he escaped with impunity. One single case is entitled to but little weight, but when added to the hundreds of those who returned to homes and friends, just deserted by the cholera, it seems to me to be conclusive.

With few exceptions, in contagious diseases, persons, once attacked, enjoy immunity from any subsequent attack. So far from this being the case in cholera, one attack seemed to render the system more liable to a second, and the instances were numerous in which the same individual had three or four returns of the characteristic diarrhœa during the same epidemic. There were two instances, under my own observation, in which the patients reached the second stage of the disease in the first attack, but in the second attack, which occurred three weeks afterwards, they passed rapidly into the third stage, and ultimately died. But I am not aware that any one has insisted on the general rule, that the same persons are not liable to second attacks of the disease.

Cholera furnishes no visible evidence of the reproduction of its poison within the living body. Small-pox furnishes its regular crop of pustules, measles its copious crescentic eruption, scarlatina its characteristic rash, and even typhus and typhoid fevers—diseases still occupying debatable ground—present their rose-colored and mulberry spots, and yet no writer has spoken of any similar phenomenon attending the development of cholera. If such characteristic of contagious poison had existed, it is scarcely reasonable to suppose that it would not have been detected by some one of the thousands of intelligent physicians who have observed and treated the disease. Not having been discovered it is fair to presume that it does not exist—*De non apparentibus et non existentibus eadem est ratio.*

From the foregoing facts and considerations, it is fair to conclude that cholera is not propagated by the same species of contagion which governs the spread of other contagious diseases, and we now return to the direct question, how is it propagated?

From all that has been said, it will be readily inferred, that we believe it to be extended through an atmospheric medium, and that, as

a general rule, through that medium alone is it capable of extension. We say, as a general rule, because facts seem to warrant the belief that it is liable to occasional exceptions. As there is a principle in the blood which favors the reproduction of animal poisons, and which, when exhausted, destroys susceptibility, so in the atmosphere there exists some principle, upon which atmospheric poisons depend for their reproduction, and when this principle is exhausted, atmospheric susceptibility is also destroyed. In both, susceptibility may be renewed, after a longer or shorter period—more certainly however in the atmosphere than in the blood. There is a mere possibility that in exceptional cases, atmospheric poisons may meet with their proper pabulum in the blood, and thus be reproduced; just as the blood poisons sometimes become epidemic; but thus far, not the slightest evidence of this fact has been furnished. With regard to atmospheric poisons, that of cholera seems to occupy the same relative position, that the small-pox poison does to the other blood poisons. They are each the most intensely contagious of their kind, and facts seem to warrant the belief, that one individual may carry so much of the choleraic poison about his person as to produce disease in others of high susceptibility, independently of atmospheric impurities. With these reservations, it may be asserted, that the whole impression made upon the system, in any given case, is derived from the quantity of the poison in the atmosphere which surrounds the patient, and not from any multiplication of that poison, after its introduction into the system. Whether the poison makes its impression directly on the mucous membranes, or whether, being absorbed, it acts on the nerve filaments, in every part of the body, is a question which I do not propose to discuss at the present time; nor is its decision at all material to the issue. However introduced, no more of it is there than was derived from the atmosphere. The atmosphere alone furnishes the pabulum, upon which the increase of the poison is made to depend. Were it otherwise—did the fluids of the body contain the pabulum for its reproduction, the smallest quantity of the poison, when absorbed, would be capable of producing the most violent disease; a conclusion certainly not warranted by its history. It is notorious that cholera never assumes as violent a type, or proves as fatal, in cities or portions of cities, remarkable for their cleanliness, as it does in filthy localities, although an equal proportion of the population may

be slightly affected by the disease. In rural districts, with a comparatively pure atmosphere, although the presence of the poison was manifested by slight and transient effects, yet death as the result was of very rare occurrence. Persons visiting the city from these districts were soon seized with the disease, in its violent forms, and many of them died. Many persons passed through the entire epidemic, carrying full loads of the poison, who, by carefully avoiding exciting causes, escaped without an attack, whilst others not so careful, were attacked and died. Near the close of the epidemic in Wheeling, a young man, who had been in the city from its commencement, laid a wager that he could eat a pint of cherries without taking the cholera. He eat the cherries and died in less than twelve hours.

Now these cannot be considered as mere coincidences. It would be scarcely reasonable to suppose that a small quantity of the poison having been previously introduced into the system, had there multiplied itself, and culminated in active disease, just when the individuals reached the city, or just at the time the young man happened to swallow the cherries, and that it would equally have happened, without these circumstances. The facts however are all reconcilable upon the principle of atmospheric propagation.

It would seem that the pabulum upon which the choleraic poison depends for its propagation must exist, to a limited extent, at least, in atmospheres remote from the habitations of man. It is also evident, that this pabulum may be increased, and in consequence, the poison multiplied and concentrated by causes under the control of every community. In illustration of these positions a few facts may be mentioned. The disease has certainly crossed broad sheets of water, as far as could be ascertained, in a direct line, and not in the usual track of navigable vessels. In an article on the subject of contagion, written by James Johnson, the then editor, and to be found in a number of the *Medico-Chirurgical Review*, published in 1832 or 1833, will be found the history of two or more vessels which left a European port, where cholera had not prevailed, and did not exist at the time of their departure. One of these vessels crossed the direct line of march which the cholera was supposed to have taken, in its transit from Europe to America. Very soon after crossing this line, the passengers and crew were seized with cholera and many of them died. This fact proves one, if not both the positions it is intended to

illustrate: First, the existence of the poison in an atmosphere far removed from the abodes of man, and second, its power of reproduction, when introduced, even in small quantities, into an atmosphere favorable for its propagation. Either it existed, in mid-ocean, in quantities sufficient to produce the disease, or what is much more probable, being in small quantity, it rapidly propagated itself when it encountered the impure atmosphere of the vessel. The other ship or ships which left the port about the same time, but which did not cross this track, escaped the disease entirely.

Many circumstances, forcibly illustrating the fact, that particular causes favor the rapid reproduction of the poison, fell under my observation. At the outbreak of the cholera, in Wheeling, in the spring of 1833, the market square was in a state of unprecedented filth; the mud, the sweepings of the market and other impurities, had accumulated to the depth of several inches, over the whole square. The hard rains, succeeded by a hot sun, had beaten down the mass and baked its surface into a firm dry crust. A meeting of the council was called, to determine what should be done with this immense accumulation of filth. The medical gentlemen who were consulted advised that it should remain undisturbed, until the disappearance of the epidemic, when it might be safely removed. From some cause, not ascertained, this advice was disregarded, and the dirt was at once gathered into heaps, and carted to the edge of the river bank, just two half squares and the breadth of a street from the end of the market-house. The wind, at the time, blew directly in a line from the pile of dirt to a thickly settled part of the town. Between midnight and daylight of the next morning, nearly every member of two families, living in the the nearest house, was seized with cholera, and not less than three or four of them died. The members of other families, in adjoining houses, and in houses on the same line, on the opposite side of the street, were taken at the same time, whilst all the houses fronting on the market square became the abode of a most fearful mortality. These few days constituted the greatest period of terror experienced during the epidemic. The cause was too palpable not to be recognized by every one.

Five miles from Wheeling, and half a mile from the Ohio river, was a small basin of low alluvial land, surrounded by high hills, and separated from the river by a forest of native trees. In this secluded

spot, were several log cabins, occupied by poor families, with members of every age, and in every degree of filth. Some time after the disease had left Wheeling, the choleraic poison found its way to this locality and multiplied with such rapidity that most of the inhabitants were attacked within twenty-four hours, and nearly one-fourth of them died, before relief could be obtained. It could not be ascertained that any one exposed to cholera had ever entered the place. Other examples of like significance might be adduced, but it is not deemed necessary.

By special causes cholera oftentimes makes its appearance and spreads in particular localities, in anticipation of the regular epidemic, and it is to the numerous facts, bearing upon this point, that we are indebted for the general belief that cholera is contagious. A vessel loaded with emigrants, among whom cholera prevails, lands at any particular port, the atmosphere of which is laden with impurities, and very soon the disease makes its appearance on shore and spreads with great rapidity. It is very natural to attribute such an occurrence to some direct contact between the patients on board and the individuals on shore, and yet the same thing has happened where no such contact could possibly be ascertained. The vessel being filled with choleraic poison, and coming into an atmosphere favorable for its reproduction, the poison soon multiplies itself and spreads in every direction. Were the same vessel to land in a perfectly pure atmosphere, or in one already exhausted of its pabulum, by an epidemic of cholera, no such result would follow, though free communication with the vessel were permitted. For months after the cessation of the epidemic in Wheeling, steamboats, having cholera patients on board, arrived at her wharf, and transacted their business as usual, and many of these patients were transferred to the hotels of the city, without producing any new cases of the disease, although the town was at the time filled up with persons who had not passed through the epidemic.

At what rate of speed the poison of cholera propagates itself in an atmosphere of ordinary purity, has not been determined, but it is certain that it is outstripped by vessels, whether propelled by steam, or sailing before favorable winds. Hence the occasional appearance of cholera in advance of the regular epidemic. The distance to which the poison may be conveyed will depend very much upon circum-

stances. As long as a vessel furnishes pabulum for its reproduction, just so long will it continue to exist; when this pabulum is exhausted the poison becomes effete, and is no longer capable of propagating itself. In a small clean vessel, the poison would soon be extinguished, but in a large one densely crowded, with a population, constantly engendering filthy exhalations, it might be propagated almost indefinitely. The facts bearing on this question are so general that they need not be individualized.

From the foregoing facts and considerations we think the following conclusions may be fairly deduced:

First—Cholera is not a contagious disease, in the strict medical acceptance of the term; its poison not having the property of reproduction within the blood.

Second—Cholera is propagated by the reproduction of its poison within the atmosphere.

Third—The condition of atmosphere, upon which the propagation of this poison depends, exists to a limited extent in atmospheres far removed from the habitations of man.

Fourth—This condition can be materially modified by human agency.

Fifth—When once exhausted, this condition is renewed only after the lapse of many years, during which time cholera becomes a disease almost unheard of and unknown.

Sixth—The poison of cholera is capable of being transferred from point to point in advance of the regular epidemic.

These points have been dwelt on at much length, because they are believed to be practically of more importance than all others connected with the history of the disease. Upon their settlement depends the determination of the means best adapted to ward off the disease, or mitigate its severity, and diminish its mortality. The practical deductions from these premises, however, will be brought to the attention of the reader, in a subsequent part of this article, and we now proceed to consider very briefly the pathology of the disease.

During the prevalence of the epidemic in Wheeling numerous post-mortem examinations were made, and all with the same general result. No morbid anatomy could be discovered, or if discovered at all, it was evidently the result of different and previous disease. There was no uniformity of structural change, and when such changes were

found, in no instance could they be traced to the effects of the cholera. Intense congestion of all the great central organs, was found in every instance, but in not one was there a sign of recent inflammation. Vacuity of the arteries, and plethora of the veins was the rule without an exception. The blood, much diminished in fluidity, presented a dark and tar-like appearance.

Now, upon what pathological principle can we account for death, without any of the structural changes, which ordinarily lead to such a result? Manifestly, by supposing that some very powerful depressing impression was made on the great nerve centres. Upon what nerve centres? Certainly not the brain and spinal column, because these centres maintain their integrity until the disease is far advanced towards death, and show no symptoms of being primarily affected. One of the most noticeable peculiarities of cholera, as it has fallen under my observation, was that the brain, unless disturbed by excessive stimulation or powerful anodynes, never manifested a delirious mind. The functions of the brain, it is true, became enfeebled and gradually died out, but they never wandered from their regular path. So also of the spinal column; sensation was unperverted and voluntary motion unimpaired, until the advent of the second stage, when cramps, as an indication of impaired vitality, very generally supervened. Indeed, the contraction of the voluntary muscles, which so often took place after death, would seem to indicate that some sensibility remained in the spinal cord after organic life had been extinguished. The congestion of the cord, in common with that of other organs, was the result of the impression primarily made on the nerve centres of organic life. It seems evident then, that the poison of cholera, whether acting on the nerve filaments, spread out on the mucous membrane of the air passages and intestinal canal, or whether, being absorbed, and acting on these nerves, in every part of the body, produces its deadly effect by an impression made on the great ganglionic system of nerves. The opinion that these are the first to suffer, and the first to die, will, we think, be fully sustained by the symptoms.

The symptoms of cholera have been so often and so graphically described, that it is scarcely necessary to repeat them in detail. The countenance of the disease, when once seen, in its short but fierce struggle against life, can never be either mistaken or forgotten. It

will haunt the observer through all the years of a long life, and to recognize it he will require no new introduction.

The more modern writers on cholera describe certain symptoms as generally giving premonition of an outbreak of the disease. The symptoms referred to are such as ordinarily precede an attack of most acute diseases, such as dullness, giddiness, headache, pain in the back and general malaise. This does not accord with my own observations, and as the adoption of such an opinion may do harm, by leading to a false security, it may be proper to give it some special attention. In the first and great epidemic of the disease in Wheeling, none of these prodromes were observed, although special attention was directed to the subject, and notwithstanding every individual was on the *qui vive* for some symptom of an approaching attack. Physicians from all quarters bore testimony to the correctness of this observation.

In some cases it was observed that the pulse became extremely slow for a short time previous to an attack, falling as low as forty, and even thirty-five beats in a minute, but this was rarely detected, and when it did exist, it preceded an unusually severe attack of the disease. In other cases, where indigestible food had been eaten, it produced a sense of præcordial oppression, but, as a general rule, the first warning consisted in the development of the one great pathognomonic symptom of the first stage of the disease. During that epidemic, a diarrhœa, ending in rice-water discharges, was universally considered the one, and only premonitory symptom, and as long as that symptom was absent each individual preserved his sense of perfect security. In numerous instances, persons enjoyed such a feeling of perfect health, even for some time after the commencement of the diarrhœa, as to be persuaded with difficulty, that they were in the slightest danger. Many could not be so persuaded and died in consequence, thus showing that, whilst the automatic system of nerves were far on their way to destruction, the nerve centres of animal life maintained their integrity. What was at that time called and considered a mere premonitory symptom, is now very correctly esteemed to be, the first stage of the disease. It commences with very little if any pain and is at first fæculent and in no respect different from an ordinary diarrhœa. Very soon however it changes its character; if pain existed in the first place, this ceases, and the bowels

act by the stimulus of distension alone; the dejections become more and more frequent and copious and are thrown off in a full stream, with very little effort. From being feculent they soon become serous, and for a time are slightly tinged with bile, but at last they present that appearance to which, by common consent, has been accorded the name of *rice water*. They resemble this more than any thing else, and are probably composed of serum mixed with chyle, through which float epithelial cells or flakes cast off from the mucous membrane. This first stage of the disease, varies in length from a very few hours to as many days, and, in some instances extends even to two or three weeks. During the whole of this time patients will continue to go about, presenting to others the appearance of perfect health, and unconscious themselves of the gulf that yawns before them. After a longer or shorter period, to this stage are superadded the symptoms of the second stage. Suddenly, without much nausea, vomiting commences. At first the ingesta are ejected, then follows at diminished intervals, a serous fluid similar to that discharged from the bowels, but without the admixture of chyle. The powers of life now rapidly fail, the skin becomes cool, the thirst intense, the pulse loses its force and increases in frequency, soon the whole surface of the body is bathed in a profuse exudation, the features shrink rapidly, and the whole expression of countenance is changed in a short time, so as scarcely to be recognized by an intimate acquaintance. The voice sinks to an almost inaudible, husky whisper, cramps of the extremities set in and finally extend to the trunk; the sensibility is rapidly impaired, being scarcely aroused by the most violent muscular spasms, and the patient evinces a remarkable indifference as well to his present condition as to his future fate.

This stage is usually of short duration, and with the subsidence of the active symptoms, the patient sinks into the third, the cold, or the algid stage. Here the vomiting and alvine dejections cease; the secretions are all suspended; the shrivelled skin partially relaxes and wears the coldness of death; the pulse is no longer to be felt, and the beating of the heart is scarcely to be either felt or heard; all the functions dependent on the vitality of the organic system of nerves are suspended, the centres of these nerves themselves seem to repose in death; whilst the grim king of terrors sits visibly enthroned on the countenance of the patient.

During all this time the patient suffers much less pain than is generally supposed. The intense thirst and the frequent vomiting and calls to stool are sources of much discomfort, but the only cause of actual pain is to be found in the cramps.* The manifestations of acute pain even from this cause do not compare with those witnessed daily in cases of ordinary cholera morbus, cramp colic or other acute diseases. The terrors of the disease are due, not so much to the sufferings of the patient, as to the great and sudden changes which take place, and to the rapidity with which the patient is conducted to the grave.

Prognosis.—This may be condensed into very few words. When taken in the first stage, the patient, under proper management, will recover in almost every instance. The disease, in this stage, is almost as amenable to treatment as an ordinary diarrhœa. A cessation of the diarrhœa will indicate a speedy return to health.

When the second stage becomes fully developed, the chances of recovery are vastly diminished. Absorption is soon suspended, and sensibility so far impaired as to place the disease beyond the control of the most judicious medical treatment. Unless a prompt impression be made by the first use of medicine, the patient will generally die. Not more than fifty per cent. of those who reach this stage recover. Recovery from the third or algid stage furnishes only an exception to the general rule. Death, however, even in this stage, is not so inevitable as to destroy all hope.

Treatment.—Perhaps in the whole catalogue of diseases there is no one which has been subjected to a greater variety of treatment, or for which more specifics have been recommended, than cholera. Through the medical journals each physician heralded forth the remarkable success of his own peculiar treatment—whilst the newspapers of the day literally teemed with specifics—each declared to be almost infallible. On the other hand, the bills of mortality told one uniform tale; fifty deaths out of every hundred of those who reached the second stage of the disease. In former epidemics, those laboring under the so-called premonitory diarrhœa, were not included in the

* It has been supposed, with much reason, that the cramps of the muscles, in this disease, are due to the irritation of nerve tissue, by the sudden withdrawal of the water of the blood. Nothing has been more satisfactorily demonstrated, than that the application of any substance, having a strong affinity for water, to a nerve, will immediately produce strong contractions in the muscles supplied by this nerve. Many conclusive experiments of this kind have been made with glycerine, sugars, chemical salts, blotting paper, etc.; these substances causing a rapid absorption of water from nerve tissue, and promptly producing the contractions or cramps mentioned.—Ed.

count. From these conflicting statements we may deduce the certain conclusion that in its early stages cholera is one of the most curable, whilst in its latter stages it is one of the most incurable of all acute diseases. Many cases have been arrested in the first stage by every variety of remedy and by all modes of treatment, while comparatively few have recovered from the middle of the second stage under any system of management.

Before proceeding farther in the treatment; it is hoped that a caution, to such members of the profession as have not met with the disease, may not be considered either out of place or presumptuous. In the treatment of cholera, in any of its stages, do not be alarmed by the name of the disease, or by the urgency of its symptoms, into the administration of too much medicine. It is not true that gigantic diseases always require for their cure the use of heroic remedies. Goliath successfully resisted the hosts of Israel, but yielded to a pebble from the sling of young David. The urgency of the symptoms, all looking to the speedy prostration of the patient, almost inevitably lead to the too frequent repetition of large doses of powerful stimulants and anodynes. Much harm may certainly be done, by the injudicious use of these remedies. They prove efficient in ordinary cholera morbus, which closely resembles cholera in many of its aspects, and in the former the only question is, not what are the proper remedies, but how much of them, will be required to produce their effect in any given case. The same is not true of cholera. The two are distinct diseases, the result of very different causes, and the remedies which do good in one, may prove injurious in the other. In cholera the organic sensibility is greatly impaired, and the little of it left may be readily drowned out, by too much stimulation, or extinguished by the too free use of anodynes. The public have been taught to look to this class of remedies for relief, and it requires much firmness, on the part of the practitioner, to resist the importunity of friends, for their too free administration. Between the natural inclination of the physician, the solicitous interference of attendants, and the hurried practice necessarily consequent on the full sweep of an epidemic, it is a question of very grave doubt whether more harm has not been done—by hyper—than by non-medication. It has often happened, through carelessness, that the heroic prescriptions of three or four different physicians have been poured down the throat of one patient

in the course of a single hour. Whatever the press of business, such things ought not to occur. But we return from this digression.

Throughout the first and second stages, the plain indications of treatment are to arrest the flood of watery exudation from the mucous membranes and skin, and to arouse and keep alive the organic sensibility. The first, and oftentimes the most difficult duty, which devolves upon the physician, in the successful treatment of the first stage, is, to so far satisfy the patient of his danger, as to induce him to give up his business, and to go to bed, there quietly to remain until he is well. Rest in a recumbent posture, and mental tranquillity, diminish greatly the requisitions for supply, made on the great centres of organic life, and thus enable them to withstand an impression of the poison, which would otherwise result in an attack of the disease. To go to bed then is the most important advice that can be given to a patient, and to follow it should be, in all cases, a *sine qua non* in the treatment. By following it, the patient will often recover without medicine; by disregarding it, the most active and judicious treatment will, in many cases, prove entirely unavailing.

The patient being in bed the diarrhœa will sometimes cease of itself. When it does not, or when the symptoms become too urgent to admit of delay, any one of the numerous remedies recommended by physicians may be selected, and most of them will answer the purpose. Should there be præcordial oppression, indicating the presence of undigested food in the stomach, an emetic should be administered. Those should be selected which act most promptly and cause the least depression. In former epidemics, mustard and salt furnished a favorite prescription, and under its use, articles of food were thrown up, which had remained undigested for several days. If more convenient, other emetics, as alum, sulphate of zinc, or ipecac may be selected. The stomach being relieved, a few drops of laudanum in cinnamon or camphor water, repeated at proper intervals, will often have the desired effect. The same result will follow the use of laudanum or paregoric combined with some vegetable astringent, as kino, catechu or tannic acid. The following was a favorite remedy with many in the epidemic of 1832-33: R Tinct. opii, tinct. camphoræ, tinct. catechu, tinct. cinnamon, comp. tinct. capsici, equal parts. Dose, teaspoonful in water, *pro re nata*. Calomel alone, in varied doses, and in combination with opium, camphor, and astringents.

gents, was looked upon as the sheet anchor, when cholera first made its appearance in this country. After a full and fair trial of mercurials, in every dose, and during all stages of the disease, I abandoned their use, except when necessary to restore the secretions, and open the bowels, after the cessation of diarrhoea, or after reaction from collapse. The first stage of the disease was more certainly relieved by other remedies, whilst in the latter stages, calomel in many cases, seemed to do harm by its depressing effects. It is fair to state however that one patient whom I was called to see reacted promptly from the middle of the second stage under the weight of an ounce and a quarter of calomel, administered in three doses, during twelve hours, by a gentleman since eminent in his profession. The same gentleman, when laboring under an attack some weeks afterwards, took calomel, in quarter and half grain doses, every fifteen minutes during twelve hours, without producing the slightest effect. He was at length prevailed on to take other remedies, and soon recovered. Each practitioner is prone to settle down upon some favorite prescription, and the following is the one upon which I finally relied, with most confidence, after having given a fair trial to many others which suggested themselves to myself or which had been recommended by others: *R* Acetat plumbi, pulv. *G.* camphoræ, ana, grs. xxiv, morphinæ, grs. ij—iij; ol cinnamon, gutt v; muc. q. s. f. m., divide in pil. xij. *Sig.* One every two, three or four hours, according to the urgency of the symptoms. During this time the patient should use some diluent drink, such as toast water or balm tea, and be restricted to mild, farinaceous articles of diet. Under such simple treatment as this, nearly every case will recover from the first stage of the disease.

When treatment commences too late to arrest the disease in its first stage, or when the patient is not seen until the commencement of the second, a somewhat more active treatment becomes necessary. It is now that the symptoms seem to demand the use of the most powerful stimulants and anodynes, and it is here that the physician is called on to exercise all his forbearance, and display all his decision of character. The writer having used himself, and having witnessed in others the use of every variety of stimulants, in all doses during this stage, was forced to the conclusion, that, as a general rule, they did no good, but that, in many cases, they did positive harm. Their effect often was, to depress still farther the already waning organic sensi-

bility, and, even in the few cases, where this sensibility was aroused by this means, and reaction produced, it was too apt to end in fatal congestions of the brain. This happened in many cases, treated by these agents, in the early part of the first epidemic.

A steady continuance of the pills above mentioned, with moderate doses of the liquid mixture, in the intervals, the free application of cups, both wet and dry, to the spinal column, and over all the great centres of organic life, to be followed by mustard plasters, or a large blister, mustard plasters or brisk friction with dry mustard and cayenne pepper to the extremities, artificial heat, by bottles of hot water or heated bricks, the use, ad libitum, of toast water, balm tea or other more palatable diluents, occasional enemas of starch water, with twenty-five or thirty drops of laudanum and ten grains acetate of lead, constitute an appropriate treatment for this stage. Numerous other remedies have been used with apparently good effects. The saline treatment was a general favorite in some localities. The compounds of chlorine, from their high oxygen-carrying power, deserve a fuller trial than they have yet received; added to this quality is their known antagonism to atmospheric poisons generally. Emetics have been recommended by some, not only with a view to their revulsive effects—but also for the purpose of ejecting the poison from the stomach and air passages. Tart. ant. upon the Rasorian principle, was tried but without any good effect. Sulph. zinci., sulph. cupri, nit. argent, sulphuric, nitric and muriatic acids, when combined with some preparation of opium, have all found their advocates. There is one remedy, not yet mentioned, upon which, from past experience, I should be disposed to place much reliance in the future. I allude to a solution of strychnine in tinct. cantharid. During the epidemic of 1847, several patients were apparently snatched from the brink of collapse by the use of this combination. Ten drops of the solution, of one grain to the ounce, were given every five minutes, in a teaspoonful of brandy and water, until its effects began to be manifested, when the same dose was continued, at gradually increased intervals, until its use could be safely suspended. The effect was too prompt, and was produced too often, to admit of its being considered a mere post hoc occurrence. All remedies, to do good in cholera, must act, either by putting a stop to the liquid drain from the blood and chyle-bearing vessels, or by exciting to increased power and ac-

tivity, the great ganglionic centres. Now strychnine is known to act more promptly and powerfully, on the nerve centres of animal life, than any other article of the *materia medica*, and it is fair to presume that, either directly, or through the animal centres, it may produce a like powerful effect upon the organic centres. If, notwithstanding these remedies, the patient grows worse and rapidly approaches the stage of collapse, other, and more powerful excitors of the organic nerve centres should be tried. Ice, applied rapidly to the surface, particularly along the course of the spinal column, to be followed by brisk friction, with a coarse, warm, dry towel, and these regularly alternated, till reaction takes place, will often be attended with satisfactory results. More powerful than this is the cold dash, which in a few instances has been used under my direction, but not to a sufficient extent to justify me in speaking confidently of its efficacy. From its known power in bringing about reaction from congestive chills generally, I should not hesitate to use it, in a near approach to, or even in the collapsed stage of cholera, should it ever be my misfortune again to encounter the disease. To be effectual, the patient should be taken out of bed, stripped, placed in a large tub, and have three or four buckets full of ice-cold water dashed forcibly over the body in quick succession. As soon as this is accomplished, he should be returned to bed as speedily as possible, the body well-rubbed with warm, coarse towels, or flannel cloths, until perfectly dry—then surrounded with artificial heat and well covered with warm blankets, there to remain, in the recumbent posture, with no other treatment except the free use of warm diluents, and an occasional dose of the strychnine solution above mentioned. These diluents are of prime importance in the later stages of the disease. The blood has been rapidly deprived of its more fluid constituents by exosmose, and diluents are important, not only to allay thirst, but also to arrest exudation, and convert it, if possible, into endosmose.

If, notwithstanding all our efforts, the patient continues to sink, and reaches a state of profound collapse, does anything remain to be done? When the countenance is sunken; when the eye deeply imbedded in its socket, has lost its lustre; when the flesh has melted away from the features; when the breath is cold, and the patient, perfectly listless and indifferent, answers questions reluctantly, in a hoarse, feeble whisper; when the skin feels like death, and the sound

of the heart can scarcely be heard, and when the pulse, long absent from the wrist, can barely be felt high up along the brachial artery, can the resources of our art furnish any relief to the patient? We feel constrained to give a negative reply? Many have recovered from this algid stage, but under my observation, a larger portion recovered of those who were left to the efforts of nature, than of those who were actively treated. The patient may lie, in the condition described, for many hours, equally balanced between life and death, and if kept warmly covered, in the recumbent posture, in rare cases, the skin will gradually lose its death-like feeling, the exudation will dry up, the thread of a pulse will be occasionally felt at the wrist, and the face will begin to assume gradually the expression of life. These feeble indications of reaction should be most industriously let alone; the brightening spark may be easily extinguished. Nature having commenced, must be left to finish her own work. The renewal of stimulants at this critical period, has, in many instances, caused a speedy return to collapse and death. Small doses of any grateful cordial, frequently repeated, may be admissible, but the principal reliance should be placed on a continuance of diluents, and on the introduction of liquid nourishment, as soon as the appetite calls for, or the condition of the stomach will bear it.

The sequelæ of the disease, which are principally due to the previous congestion, must be treated upon the general principles of our science. Each case will probably require its own especial treatment.

Having, in a previous portion of this article, discussed, at some length, the mode of propagation of the choleraic poison, and some of the laws governing its diffusion, and having deduced from them some general conclusions, we shall devote the remainder of our space to the legitimate inferences to be drawn from these conclusions, on the subjects of

Prophylaxis and Hygiene.—In strictly contagious diseases, quarantine is the prince of prophylactics. Did cholera belong to this class, the sure mode of preventing its entrance into our country would be, an extensive system of quarantine strictly and rigidly enforced; other sanitary regulations would be of only secondary importance. To say nothing of the great injury inflicted on the best interests of any country, by such a sanitary measure, it is a sufficient argument against it to say, that it has proved entirely inefficient, wherever it

has been tried. From the time the cholera first left its moorings in the east, to make its voyage round the world, each country, upon the announcement of its approach, attempted to exclude it from its ports, by some system of quarantine. Notwithstanding all such obstructions, this pestilential ship entered all ports of its election at its pleasure, and remained there till its mission was accomplished. Perhaps the most perfect and rigid system of quarantine ever before established proved a most signal failure. During a former epidemic the Prussian ports were in a state of blockade, and it was deemed by the king a favorable opportunity for testing the efficacy of quarantine in keeping out cholera. In the exercise of his despotic power, he ordered and enforced the most rigid system of quarantine and of sanitary cordons known to any nation. In the face of these grim sentinels the disease quietly entered his dominions and took up its abode in the filthy dens of his capital. During the present epidemic it is reported that cholera made its appearance, in the island of Malta, in the face of a system of quarantine carried to the verge of absurdity.

It is not denied that quarantine may postpone the otherwise premature entrance of cholera into any given port. Such a thing is consistent with the laws of its propagation heretofore laid down, and it is possible that such may be the present condition of New York city. But let her citizens beware of being lulled into any false security, for if we are to judge of the future from the history of the past, nothing is more certain than that these means, now successful, will prove entirely inefficient when the disease approaches in its epidemic form. The danger of such false security consists in the comparative or entire neglect of other, and much more important sanitary regulations. If quarantine be enforced merely for the purpose of gaining time to complete such regulations, it may be considered a useful and commendable expedient.

As conservators of the public health, it is the duty of physicians, not only to expose the impossibility of entirely excluding the disease, in its epidemic form, but also to point out and enforce the means best adapted to prevent its extension and mitigate its severity. Fortunately we have at our command, if we are diligent in using them, the means of rendering cholera comparatively a harmless disease. What are these means? Manifestly all such as tend to pro-

duce a perfectly pure state of the atmosphere which surrounds us. In an atmosphere divested of impurities, imparted to it by the presence of man, cholera cheated of its victims will soon be compelled to look for some other abiding place. Where men are congregated in large numbers, during indefinite periods of time, and under circumstances not favorable to cleanliness, we find all the hotbeds of the disease. Death from cholera is of very rare occurrence in the country, whilst the densely populated and filthy districts of large cities are oftentimes decimated. If, then, we are to have immunity from a disastrous epidemic, it can only be procured by a thorough cleansing of all our cities and towns. Not the ordinary cleansing, by sweeping the principal streets and washing out the great sewers, but a cleansing which shall extend to every man's premises, on every street and alley, in the heart, as well as in the suburbs of the city. The demands of health will be satisfied with nothing short of a complete and thorough cleansing of every Augean stable. This work cannot be commenced too soon, nor can it be continued too long, or prosecuted with too much energy and industry. Should it be neglected in any locality until too late to prove effectual, let no physician subject himself to the reproach of having neglected to point out and urge its importance upon the public authorities. Let us urge it in season and out of season, and if death must come, in the shape of aggravated cholera, we can at least meet it with the consciousness of having discharged our duty.

The best means for purifying the atmosphere must be familiar to all, and do not require repetition. The removal of all filth, and every source of filth, and the subsequent free use of disinfectants are plainly indicated.

In concluding our subject we shall make a few remarks on individual hygiene. There can be no doubt that by strict attention to the general laws regulating health, many persons may pass through the worst epidemic without an attack of the disease, who by neglecting such precautions, would equally suffer with others. The object of every individual should be to preserve himself in the best possible state of general health. For this purpose it is not necessary or proper that he should make any great change from his ordinary habits of life. All those causes which are known to make extraordinary draughts on the nerve centres of organic life should be carefully

avoided, whilst all means adapted to impart increased vigor to these centres should be equally cultivated. Strict attention to personal cleanliness is as much a necessity, with individuals, as purification of the atmosphere is with communities. Bathing of whatever kind, if an habitual practice, should not be discontinued, though it might not be safe for any one unaccustomed to such luxuries to astonish himself with a cold or shower bath, as a preventive of cholera. All confirmed habits should be continued, though they may be often moderated with advantage. The continuance of wine to those accustomed to its use, should always be recommended. Old toppers, who suddenly leave off their drams, are almost invariably attacked and generally die. Their usual habits should be kept up, though their ordinary allowance ought, in no case, to be exceeded. The strictly temperate will derive no increased immunity from a resort to stimulants of any kind. Nostrums and medicines of all kinds, unless prescribed by a judicious physician, should be carefully avoided.

In former epidemics, particularly the first, much harm was done by a rigid system of abstemiousness, amounting, in some cases, almost to starvation. Wholesome, nutritious food, in sufficient quantities, and at regular intervals, is essential to the maintenance of a healthy organic sensibility. All excesses, or all articles of food which, under ordinary circumstances, are known to produce even slight discomfort, should be carefully avoided. Those accustomed to their use, may eat ripe fruits, fresh from the tree or vine, in moderation, with impunity and even with advantage. Light meats, wholesome, fresh vegetables, and the ordinary beverages of milk, tea and coffee, are what the healthy appetite calls for, and nature will be found, not only to tolerate but to profit by them. The clothing should be such as to preserve a uniform temperature of the surface. Flannel next the skin has been universally recommended, and there can be no doubt of its utility. The clothing generally should be accommodated to varying conditions of the temperature: all sudden transitions should be carefully guarded against, and the body when heated by exercise should be permitted to cool under some slight addition to the covering. The laws regulating the diffusion and concentration of atmospheric poisons, should be borne in mind, and our advice given in accordance with them. As the sun gains power in the morning such poisons are gradually expanded and lifted into the higher regions of the atmos-

phere: so in the evening, as the sun goes down, and the shadows of night gather round us, they are rapidly concentrated near the surface of the earth. During this period of condensation is to be found the greatest danger of exposure; hence the morning, the late evening, and the early night air, should be avoided. For the same reason, chambers should be selected on the second or third floors in preference to the first—cholera having always found a favorite abode in cellars and basements. During these hours the windows and doors of houses should be closed, even though it become necessary to open them at a later period. It has been recommended to wear a veil of some kind over the face, when persons are compelled to go out at unseasonable hours, and there can be no objection to the adoption of such a recommendation. Davy's safety lamp effectually excludes the inflammable gases from the lamp-flame, and there can be no reason why atmospheric poisons may not be excluded from the air-passages by mechanical contrivances constructed on the same principle.

Fear, acting through the animal, makes heavy draughts on the organic sensibilities, hence tranquillity of mind furnishes an important safeguard against an attack of the disease. To secure this, persons should be advised to attend to their ordinary occupations, or encouraged to spend their time in administering to the wants of the sick. The sooner any individual rids his mind of the fear of contagion; the sooner he familiarizes himself with the presence of the disease, so much the sooner will he occupy a position of comparative security. Distance, as it "lends enchantment to the view," also increases the apparent magnitude of all dangers. One of the worst effects of a belief in the doctrine of contagion is, that whilst it gives no protection to the individual it deprives the sick of the ordinary offices of humanity. Humanity in all its beneficent warmth often shrinks from a visit to the bedside of contagion. Once satisfy the mind that the disease is not contagious, and that increased security is to be found in benevolent ministrations, and we will no longer witness the shocking scenes of neglect which disgraced the epidemic of 1832-'33.

When the epidemic influence is fully developed in any locality, persons should be especially cautioned not to leave their homes in search of places of safety. They already carry with them a full load of the poison, and the exertion incident to hasty preparation and rapid travelling has the effect of impairing their powers of resistance. A

large proportion of those who left Wheeling, after the epidemic was fully pronounced, were attacked with the disease before reaching their destination. Under such circumstances, home is the place of greatest safety.

One paramount duty of every physician, both before and during an epidemic, is to impress upon all, who depend upon him for advice, the vital fact that diarrhœa, in whatever form it commences, is the first stage of cholera, and that the sooner it changes to the characteristic rice-water appearance, the more speedy is the descent to the last and fatal stages. From ignorance, or wilful disregard of this fact, thousands and tens of thousands of lives have been sacrificed. He who neglects this symptom, fails to put an extinguisher on the burning train which conducts to the explosive mine on which he stands. It is asserted by some writers, that cases occur, in which the violent symptoms of the second stage set in without a precedent diarrhœa. Without denying the truth of these statements I must be permitted to say that no such case fell under my observation, or under the observation of those physicians with whom I was immediately associated in practice. In some cases it was certainly of very short duration, and in others it was at first denied, but in all, upon close enquiry, its existence was clearly ascertained. The importance of this stage, as the only one generally curable, cannot be too often or too forcibly inculcated.

Many other points suggest themselves as worthy of being mentioned, but we have already transcended our limits. Attention has been directed to these points having a direct bearing on the prophylaxis and general hygiene of the disease, to the exclusion of much that might have been said on other branches of the subject, particularly the treatment. If, however, we have succeeded in showing that every community has at its command the sure means of diminishing the number of cases, and of converting the most fatal, into a comparatively manageable disease, we have accomplished more for the general welfare, than if we had given a full history of every mode of treatment, and a complete list of all the specific remedies, which have been recommended as infallible for the use of the disease in all its stages. When under the impression of a concentrated poison, the patient passes rapidly into the second and third stages, all remedies and all modes of treatment will be found alike unavailing, and as this mon-

ster even now approaches our shores, he comes with the old, familiar, melancholy motto, branded on his front: FIFTY DEATHS OUT OF EVERY HUNDRED I ATTACK.

ART. III.—*Report of a Case of Vesico-Vaginal Fistula successfully treated by Sims's Method.* By JAMES BOLTON, M. D., Richmond, Va.

Mrs. ———, 24 years of age, delivered of her first child March 27, 1865. Labor protracted, and followed by vesico-vaginal fistula.

July 18, 1865. *Present Condition.*—General health much improved; having been greatly impaired by the sloughing of the vesico-vaginal septum, and by the irritation from the constant dribbling of urine. On examination with the speculum, the upper wall of the bladder was seen protruding through a large fistulous opening, forming a tumor about half as large as a hen's egg, covered by bright red irritated mucous membrane.

Operation.—The patient was placed upon a table with the knees drawn up, and the face turned about three-fourths downwards. The interior of the vagina was exposed by the duck-billed speculum, and a very clear view of the parts was obtained. The hernial protrusion was pushed back by a loop of thick silver wire. The margin of the fistulous opening was then transfixed by means of a long-handled, narrow-bladed knife. Through this incision one of the blades of an admirably constructed pair of scissors was passed, and the margin was pared in a single strip. By means of a hollow needle fourteen stitches of silver wire were passed, which were then twisted so as to retain the opposing edges in perfect coaptation. An S shaped self-retaining catheter was then introduced. The patient was placed upon her back, and directed to make free use of diluent drinks.

On the tenth day the stitches were removed, and the union was found to be perfect. At the present time (January 1866) the cure remains perfect and permanent.

The success in this case is a great triumph for our countryman, Dr. Sims, of Montgomery, Alabama, to whom justly belongs the credit of the operation. The fistulous opening was one of great size, and it was perfectly closed by a single operation. The means used are extremely simple. The edges of the fistulous opening should be well

pared. The wire should take in sufficient tissue for a good hold, and as many stitches should be introduced as the parts will well bear.

ART. IV.—*A New Instrument for Treating Ununited and Oblique Fractures.*
By E. S. GAILLARD, M. D., Richmond, Va.

[The greater portion of this article was published in the New York Medical Journal, November 1865.]

The treatment of ununited and oblique fractures has always been a source of perplexity and annoyance. In the whole field of surgery no portion of it is perhaps characterized by a more unsatisfactory cultivation and disheartening return.

The literature of the subject above is material for a volume, though this be but a record of promising suggestions, faithful trials and invariable failures.

The starch and dextrine bandages, friction and acu-puncture treatment, plaster-cast boxes, Dumrieher's railway splints, Warren's bow and Maisonneuve's bridge, iron pins and leaden wire, Diefenbach's ivory pegs, with the infinite and complex apparatus for extension and counter-extension, etc., have all been admired, praised, tried and comparatively abandoned.

In a recent number of the London Lancet it appears that this subject, again revived, is engrossing the attention of the most prominent and most favorably known medical men in Europe. Fergusson, Bickersteth, Fletcher, Holmes Coote, Hilton, Curling and others, have all recently expressed their opinions and made their suggestions in this connection.

It was from reading the views expressed by these gentlemen that more than incidental attention was again bestowed upon this subject, and that the instrument now to be described and once successfully used appeared to promise sufficiently valuable results to warrant its being submitted for examination and trial.

There is a peculiar enthusiasm which usually characterizes the claims and writings of all who submit any original contributions or suggestions for the general good. This enthusiasm is often a fruitful source of endless errors, and can only be corrected by the caustic touch of analysis and criticism. It is not, however, felt in regard to this instru-

ment, which has been used by me but once, and though with satisfactory results, there is a full appreciation of the fact, that a single trial is an insufficient basis for either commendation or enthusiasm.

If this instrument answers only as well as many of the complicated pieces of mechanism used in this connection, its simplicity, economy and easy availability, will, it is believed, give it a comparative advantage over other appliances, and will commend it to the attention of those relatively interested. The expectation is, however, indulged that this unpretending little instrument will fulfill all of the indications usually manifested in cases of oblique or ununited fracture, requiring the use of surgical apparatus.

In so very brief a paper a description of the condition of the injuries in the treatment, of which this instrument is especially applicable, must necessarily be avoided. The anatomical relations of the fractured bone, the mechanical problem to be encountered and solved in a successful adjustment of the fragments, the resulting pathological condition of these fragments, when all attempts at adjustment fail, etc., must all be omitted.

The chief difficulty to be encountered in the treatment of all fractures, is the securing of an accurate and constant apposition of the fractured extremities. If this be successfully accomplished, there is usually complete union without shortening: the degree of this shortening being generally a true index of the relative efficiency of the apparatus adopted.

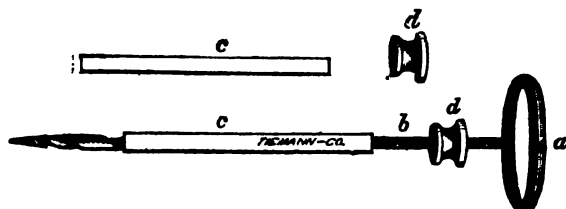
In oblique fracture, over-extension, a frequent fault, results in a false joint or in an entire absence of union. Deficient extension allows an overriding of the fragments, with consequent shortening.

An instrument which, by keeping the fractured ends in close and constant apposition, will secure the patient from the misfortune of either of the conditions just mentioned, must be regarded as successful.

In ununited fractures, close and constant apposition of the fragments, with slight stimulation applied to them, is all, so far as is known to the writer, that surgery has been able to accomplish. This instrument will, it is believed, fulfill all of these indications.

The important fact will be recollected, that in the treatment of fractured bones, the use of steel or wire pins has never produced

material, local or constitutional injury. All oral and printed testimony tends towards the establishment of this fact.



This instrument is composed of four pieces: the handle (*a*), the screw (*b*), the sheath (*c*), and the nut (*d*). The shaft or screw is six inches long, the lower part of this being cut with a screw similar to an ordinary gimlet, and the upper part being furnished with an ordinary male-screw, on which works the nut (*d*)—the shaft being of steel and the nut of brass. The sheath, three inches long, is made of silver, and the handle of the instrument of rosewood, or of some material equally hard. The male-screw, cut on the upper part of the shaft, extends from the handle to a point about two and a half inches below it.

In the sketch furnished the sheath and nut are detached for a more thorough comprehension of the mechanism of the instrument. These pieces, the sheath and nut, are seen elsewhere *in situ*.

It is proper to say that the instrument, with the proportions given, is intended for the treatment of a fractured femur; in treating the fractures of other long bones the length of the shaft and sheath would be proportionally less. The diameter of the shaft is one-eighth of an inch.

The instrument is thus applied, it being supposed that the femur is the bone fractured, and that the fragments have been placed in apposition.

Through an enlargement of the orifice, caused by the injury sustained or through an artificial opening immediately over the site of the fracture, the silver sheath, detached for this purpose, is passed down to the bone. The shaft, with the nut immediately under the handle, is then passed through the sheath until the point of the shaft rests upon the bone. The operator, seizing the sheath with the left hand, one finger of this hand being under the fragments of bone, slow-

ly turns the handle of the shaft with his right; the sheath being held firmly to prevent a slipping of the point of the shaft upon the surface of the bone. The process of turning or boring is then continued until the shaft shall have descended an inch and a half or until it has pierced both fragments of the bone. The shaft and sheath being then grasped with the left hand, a finger of which is under the fragments of the bone, the nut is then turned until it reaches the superior extremity of the sheath and until the resistance offered is greater than the operator can overcome without using undue force. The forcing down of the nut brings the fragments of bone in apposition and retains them there as long as the instrument is allowed to remain; the duration of this period being from three to four weeks for the femur, and a proportionally shorter time in fractures of the smaller bones.

The instrument being *in situ*, all extending and counter-extending forces are removed; light lateral splints, as a precautionary measure, are then applied with an ordinary roller-bandage, and the process is complete.

The instrument is allowed to remain until there is satisfactory evidence of bony union, when it is withdrawn. Its presence will have been found to cause but little local irritation and no perceptible constitutional disturbance. All who are familiar with the literature in regard to silver sutures would, of course, anticipate the fact that the contact of the silver sheath with the tissues produces no material local irritation, and those who have seen the iron or steel pins used in the treatment of fractures, will not be surprised at the small amount of disturbance caused by the remaining of the shaft of this instrument in the fractured bone for a period of two or more weeks. As soon as the instrument is withdrawn the opening through the muscular tissues and through the integuments heals without difficulty.

It is evident that by the use of this instrument there can be neither a false joint formed from overextension nor the occurrence of shortening from overlapping of the fragments.

This instrument can be improvised by using an ordinary gimlet for the shaft, a portion of a female catheter or the canula of a large trocar for the sheath, and a few bits of paste-board to act as the nut; these pieces of paste-board being sufficient in number to fill the space occurring on the shaft, between the superior extremity of the sheath

and the handle of the instrument, after both fragments of the bone have been perforated.

This instrument has recently been successfully used by one of the prominent physicians of New York city. He writes as follows, the letter being dated December 30th, 1865: "I used your instrument for ununited fractures, on the 24th of November, in a very bad case of ununited oblique fracture of the humerus, at the lower third, complicated with partial paralysis of both upper and lower extremities, of many years' standing, and with perfect success. The gentleman is about thirty-five years of age; a very stout person, but partially paralyzed on the left side, for many years. He fractured his left arm three inches above the elbow in July last. Everything did very well, for nearly a month, when, owing to his paralyzed leg, he fell down and probably broke up the adhesions in his arm. I saw him again in October and tried to excite inflammation of the ends of the bones, by friction and by electricity carried through the point of fracture by means of needles carried down to the bones. I excited pretty sharp inflammation, but no union took place, and on the 24th November, assisted by Drs. — and —, I applied your instrument, bolting the bones together very firmly and then fixed the arm and forearm in a sole-leather splint, which, cut at a right angle, fitted perfectly. I left the gimlet in twelve days, when pus appearing around the orifice, I removed it, without disturbing the dressing or splint. A few days after, I found the pus had burrowed down the arm and an abscess had formed, near the elbow, which I opened; *it did not connect with the bone*, but only with the upper opening, where the instrument was applied, through the cellular tissue, under the fascia. I drew a seton of oakum through the sinus and retained it for a few days, until a drain was established at the lower opening, when it was removed and a tent applied to the lower opening. The upper one dried up in a few days, and the lower one discharged less and less, and has finally healed up also. The bone is now quite firm and the gentleman has gone to his business."

The italics in this extract are not in the original, but it is believed that every candid and fair reader will consider the author justified in using them. It is not evident to what cause the formation of the abscess mentioned was due; it may have been to the use of a sheath containing too much alloy in its composition or to a morbid sensibi-

lity of the tissues. Whatever the cause, however, the formation of an abscess, even in *every* case, would be but a trifling phenomenon, in the successful management of a grave and usually intractable injury. There is in the possession of the author one of these instruments, handsomely made by Messrs. George Tiemann & Co., 63 Chatham street, New York.

Such is briefly the history of this instrument. My experience in regard to it has been very limited indeed, but the instrument is so simple in its preparation and application and, so far, so satisfactory in its results, that it is presented to the profession for a careful examination and fair trial.

MEDICAL AND SURGICAL RETROSPECT.

1. *New Method of Administering Chloroform.* By Dr. SIMPSON, Prof. of Midwifery in the University of Edinburgh.

At a recent meeting of the Edinburgh Obstetrical Society, Dr. Simpson said, that for some time he had adopted Dr. Moir's plan of administering chloroform, and that by this plan *anæsthesia* was produced more rapidly, more safely, and with very much less chloroform. The plan is to lay *one* single layer of a towel or handkerchief over the patient's nose and mouth, taking care not to cover the eyes, and to drop on this single layer the chloroform drop by drop, until the *anæsthesia* is sufficiently marked; besides, none of the drug is lost by evaporation when it is administered in this manner, for the patient inhales it at the moment when it is poured on the cloth, and inhales it mixed with a sufficient quantity of air, which is easily inspired through a single layer of any ordinary napkin. Dr. Simpson has often feared lest the lives of patients should be sacrificed by the careless manner in which, in particular, students and young practitioners sometimes applied the damp-folded cloth over the patient's face, without admitting a sufficient supply of air; and he has no doubt that many of the deaths attributed to chloroform were due only to the improper administration of it, and were, consequently, no more chargeable on the drug itself, than were the many deaths resulting from accidental overdoses of opium, &c. But the dangers from careless and improper administration would be diminished if there were never placed over the patient's nose and mouth more than one single layer of cloth, moistened with a few drops of the fluid. The first patient to whom he had administered it in this manner had been chloroformed several times previously, and had never gone to sleep till

an ounce and a half or two ounces of the fluid had been employed; but when administered drop by drop on a single layer of a thin towel, one drachm had sufficed to produce the most profound sleep. It had thus all the advantages that had ever been claimed for the complicated apparatus which some medical men were still in the habit of using. There was only one precaution to be attended to in employing chloroform in this manner, viz., care should be taken to anoint the lips and nose of the patient beforehand with oil or ointment, to prevent the skin from being injured by the contact of the fluid that resulted from the close application of the wetted towel to the patient's face.—*Edinburgh Medical Journal*.

2. *On a Simple Mode of Testing for Lead in the Urine.* By Dr. REEVES.

We have often regretted the want of some simple means to detect the existence of lead in the urine; the evaporation of a large quantity, and then adding acetic acid, filtering, and then passing sulphuretted hydrogen gas into it, taking up a considerable amount of time. We have used the following simple plan for detecting it in several cases, and found it answer extremely well:—After giving the patients four or five grains of iodide of potassium three times a day, we give them a piece of sulphuret of potassium, tied up tightly in a piece of thick white rag, and request them to place it in the urine every time they pass it for five minutes for two days. If lead exists in the body, the iodide of potassium combines with it, and renders it, by converting it into iodide of lead, soluble, causing it to pass off through the kidneys. The iodide of lead in the urine is readily decomposed when it comes in contact with the sulphuret of potassium, and insoluble sulphuret of lead is formed, which remains in the rag.

In the absence of the blue line on the gums, or when it is feebly marked, and the symptoms present can scarcely be said to belong to lead poisoning, we have found it of the greatest value in determining the true cause of the disease. In obscure pains, of a rheumatic or neuralgic character, which have resisted every kind of treatment, the detection of lead by these means will enable the practitioner, by continuing the iodide of potassium and strychnine, to cure the patient.—*Australian Medical Record*.

3. *On the Diagnostic Value of the Iodine Injection in Fistula in Ano, and on Incision from within outwards.* By M. A. AMUSSAT, M. D.

When exploration with a slender probe has failed to indicate whether the tract of a fistula in ano is complete or incomplete, injection of tincture of iodine into the sinus is the procedure most likely to remove doubt. The surgeon inserts the forefinger of the right hand into the anus, turning its pulp towards the spot where he suspects the internal orifice of the fistula to be situated. An assistant then injects the

iodine, and if *even a few drops* penetrate into the bowel, the smarting complained of by the patient and the characteristic yellow stain which the iodine leaves on the surgeon's finger establish the diagnosis with all desirable certainty.

After this has been done, iodine injections, which sometimes effect a cure, may for a time be persevered in, and render further investigation unnecessary. In the contrary case, the knife must be resorted to; but instead of introducing the grooved conductor from without, which the irregularity of the tract sometimes renders very difficult, and to obviate the necessity for painful research, which occasionally leads to perforation of the denuded and thinned intestine, it is both safer and more expeditious to adopt an opposite course, and introduce the conductor into the sinus through its internal aperture.

In a case of this description, which he recently attended jointly with Dr. Chaillou, M. Amussat adopted this practice with much advantage. Several injections had failed in healing the fistula, and incision was resolved on. Up to this period, however, the style had never passed the internal aperture, despite the extreme care with which the investigations had been conducted. M. Amussat then adopted the following plan: The patient having been placed in an appropriate attitude, inhaled chloroform, and when anæsthesia was induced, the surgeon inserted into the intestine a *speculum ani*, which he opened so as to display that part of the mucous membrane where the orifice of the track was supposed to exist. He then bent a slender silver conductor, and soon succeeded in introducing it into the internal orifice of the sinus, and gradually brought it out through the external aperture; the speculum being still maintained *in situ*, he divided the soft parts by running the knife along the groove of the conductor; and although the tract was extensive, the consequences of the operation were not serious, and a complete cure was promptly effected.—*Journal of Pract. Med. and Surg.*

4. *A Simple Mode of Insuring the proper healing of Anal Fistula after Incision, without Plugging.* By J. J. CHISHOLM, M. D.

CASE.—Mr.—, æt. 30, of good health and robust frame, had been for a long time annoyed by a rising on the left buttock, which frequently formed an abscess and discharged. The escape of pus continued for some days, then gradually diminished until scarcely perceptible; the part, however, remaining always more or less moist. As business necessitated much horseback riding, the irritation was kept up by this exercise. Upon examination, a probe traversed a blind fistulous passage of nearly two inches in length. The entire track was incised and *thoroughly painted, throughout its entire extent, with perchloride of iron*, for the double purpose of controlling hæmorrhage, and slightly cauterizing the surfaces, so as to prevent quick union between the lips of the wound. A mass of firmly clotted blood filled up completely the interstice. Twenty-four hours after the application suppuration had

already commenced, detaching the coagula, which were before firmly adherent to the wound; granulations formed over the entire surface, and consolidation from the bottom was rapidly effected without the patient having been detained a single day in his chamber.

The daily plugging of the wound, which is so very painful as to make the patient shun the visits of the surgeon; the doubts of retaining the plug within the wound, and the confinement necessary when this treatment is carried out, are all obviated by the much simpler, safe, and more efficient method of painting with the perchloride or persulphate of iron. The tent is a relic of a former age, which should be discarded from the treatment of this surgical lesion.—*American Medical Times*.

5. *On the Diagnosis of Dislocations of the Shoulder.* By M. MAISONNEUVE.

It very often happens, M. Maisonneuve observed in a recent clinical lecture, that even experienced surgeons may hesitate respecting the existence of a luxation of the shoulder; and you are aware of the learned dissertations to which the differential diagnosis of these luxations, fractures of the neck of the humerus, and even simple contusion, has given rise to. Numerous are the pages, even in the most recent works, devoted to this important discussion; and certainly, after reading and meditating upon them, one can but be persuaded that this diagnosis is one of the most delicate and difficult in surgery. This does not arise from the enumeration of the characteristic symptoms of each lesion being incomplete. Far from it; for real and doubtful symptoms, vague and precise symptoms, are so accumulated that even the most skillful can scarcely make them out, while the simple practitioner is utterly at a loss. Still there is a simple and easily discovered symptom which will always enable you to recognize with certainty not only this but any other dislocation, whatever swelling of the surrounding soft parts may exist. This symptom is based upon the fact that *in all dislocations, the normal movements are impeded or abolished*, while in simple contusion these movements persist, and in fractures others of an unusual nature are added to them. Take hold of the arm, and endeavor to make it execute the movements proper to the articulation. If these are found to be impossible, or very limited, there is without doubt dislocation; while if these remain intact, no luxation exists, and the presence or absence of shortening and crepitation will determine whether the accident is a fracture or a mere contusion. This sign alone will enable the diagnosis of the dislocation to be made. The study of the symptoms may be carried further, and analyzed in detail. We may verify the flattening and the depressibility of the shoulder, the projection of the head of the humerus, the elongation of the limb, and the various circumstances which determine the variety of the dislocation. But the mere fact of the abolition of the movements of the joint had already placed the fact of the dislocation beyond all doubt.—*Moniteur des Sciences Médicales*.

6. *On Dislocation of the Head of the Femur into the Obturator Foramen, with preservation of the movements of the bone.* By M. SÉDILLOT, of Strasburg.

A highly interesting paper was forwarded to the Academy of Sciences, by Professor Sédillot, on the subject of the immediate preservation of the movements of the inferior extremity in cases of accidental displacement of the head of the femur into the obturator or thyroid foramen. The difficulty or absolute impossibility of the movements of the limb has invariably been considered as the most constant symptom of recent dislocations, especially in diarthrodial joints. It seems indeed difficult to imagine how a bone extruded by some violent effort from its articular cavity, an injury necessarily involving laceration of the ligaments, muscular tension, and changes in the natural position and direction of the limb, can possibly still allow of motion, so painless and extensive as not to interfere materially with the functions of the extremity. Surgeons, therefore, have neither surmised nor admitted that a patient, suffering from dislocation, may uninterruptedly pursue his usual avocations as if he had merely undergone some slight contusion. Instances of the kind exist, however, and are deserving of notice, inasmuch as they may induce a dangerous degree of security, and lead to disastrous errors of diagnosis.

This is the object of M. Sédillot's paper, and, in support of his views, the author adduces several cases of luxation of the femur forward and downward, in which the patients were nevertheless able to walk immediately after the occurrence of the accident, and to exercise as usual, without much pain or lameness. It is, moreover, for the purpose of cautioning the practitioner against an error which might readily be fallen into in such cases, that M. Sédillot enlarges on these circumstances which have not hitherto been pointed out. When the attention of the observer is led astray by the absence of any marked difficulty of locomotion, the gravity of the injury may easily escape detection, and a minute examination of the relative changes of situation of the pelvis and femur may appear unnecessary in consequence of the apparent unimportance of the symptoms. The persistency of the movements and functions of the limb, says M. Sédillot, is accounted for by the fulcrum afforded to the head of the femur by the depth and shape of the margin of the obturator foramen.

M. Sédillot's cases tend to show that the displacement of the head of the femur into the obturator foramen, when the movements are preserved, is characterized by an elongation of the limb of from five to fifteen lines, a symptom which is rendered more evident by the lowering of the hip-joint on the diseased side; the outward rotation of the extremity and the abduction of the foot; the prominence formed by the head of the bone in the vicinity of the pubes, and the depression existing in the spot it should naturally occupy; the impos-

ability of bending the thigh in adduction, and the ease with which this is accomplished when the limb is in abduction. Reduction is seldom difficult, even when the dislocation is of several weeks' standing, and is effected by traction outward of the upper part of the thigh, the knee being turned inward and forward, and placed in adduction when the head of the bone is supposed to be on a level with the acetabulum. In order to obviate a relapse, the only precaution necessary is to keep the injured extremity extended and turned slightly inward. The cure is rapid and complete. When the parts have not been replaced in their proper position, the bones adapt themselves to each other, and the patients are frequently enabled to use the limb, remaining, however, affected with permanent lameness. *Journal of Pract. Med. and Surgery.*

7. *A Simple Method of imparting an Agreeable Flavor to Cod-Liver and Castor Oils.* By M. JEANNEL.

Therapeutics are indebted to M. Jeannel for an improvement which will facilitate the always difficult exhibition of fish oils. Like M. Sauvan of Montpellier, M. Jeannel observed that the addition of ten grains of essential oil of bitter almonds to three and a quarter ounces of the most offensive cod-liver oil entirely dispelled its nauseous odor and fishy flavor. It was, however, not enough to disinfect the oil, it was further desirable to render it agreeable, an object which M. Jeannel has effected by very simple means; the cod-liver oil should be powerfully shaken in a phial with once or twice its volume of distilled cherry-laurel water, and the two fluids afterwards separated, after forty-eight hours' rest, with a funnel. The oil should be filtered if it has not spontaneously clarified. Brown, fetid oil acquires by this simple process an agreeable perfume and a pleasant flavor of almonds, which remains on the taste during the whole time of digestion.

With regard to castor oil, three drops of essential oil of almonds communicate to three and a half ounces of oil a pleasing perfume and taste. The Gazette des Hôpitaux states that for several months Dr. Rennes of Bergerac, has been in the habit of successfully palliating the noxious flavor of fish and castor oils, by merely adding one drop of essence of bitter almonds to every six or eight drachms of oil. *Journal of Pract. Med. and Surgery.*

8. *Digitalis in Delirium Tremens.* By W. B. KESTEVEN, Esq., Upper Holloway.

In a case of delirium tremens, which occurred to me a short time since, I administered three separate doses, one drachm each of tincture of opium, without the least benefit, stimulants being freely given at the same time. Finding that no good result followed, I gave four

doses, of half a drachm each, of tincture of digitalis. The patient continued still excited, not having closed his eyes for ninety hours. The relatives then requested a consultation.

Two hours after the last dose of tincture of digitalis had been given, Dr. Ballard met me at the patient's bedside, when we found that he had just fallen into a quiet sleep. This lasted more or less completely for thirty-six hours, and the patient was apparently safe. He was a man of middle age and an habitual toper. It was his first attack. He had, however, a relapse a few days afterwards. I at once gave him two drachms of tincture of digitalis, to be followed every two hours by half-drachm doses. In less than three hours he was soundly asleep. Several weeks have since passed, and there has been no return of the malady. I would add, that in the next case of delirium tremens that falls to my lot, I shall be disposed to begin with a larger dose than I gave in this case.—*Medical Times and Gazette.*

ECLECTIC DEPARTMENT.

1. *A Course of Lectures on the Progress of Surgery during the Present Century.* Delivered at the Royal College of Surgeons in England. By WILLIAM FERGUSSON, F. R. C. S., F. R. S. Surgeon to King's College Hospital, Professor of Surgery in the Royal College of Surgeons and Surgeon Extraordinary to H. M. the Queen.

LECTURE II.—ON LITHOTRITY.

When I lectured last year on the subject of lithotritry my chief object was to bring under notice a method of practice which, in my opinion, was little known. From personal experience I had learnt that although stones might be broken ever so small, the fragments would not come away spontaneously in all instances, and that unless they were removed, patients might be left after lithotritry actually in a worse condition than if nothing had been done, with a number of stones instead of one, and consequently with a greatly increased surface for the deposit of new material. I had found out the uselessness of most of the instruments for the extraction of small calculi or of fragments, and the chief object of that lecture was to recommend small lithotrites and scoops, with a view to render the cure of stone by crushing both more precise and more rapid with lithotrites of comparatively small size. I fancied that small stones, and particularly fragments, could be more easily attacked, and that with small scoops, fragments of considerable size, or even small stones entire, might be extracted with a facility greater than thick instruments would permit. Further, I adduced a number of illustrations of the practice which seemed to me of considerable value. Since that time I

have had additional reason to be well satisfied, and it remains to be seen whether this will become a useful and common addition to the practice hitherto followed of letting fragments pass spontaneously and literally by chance.

More than thirty years have elapsed since Heurteloup and Costello first in a manner taught this operation to the surgeons of this country; for although Elderton, Hodgson, and a few others had done something, it must be admitted that our attention was most forcibly arrested by these gentlemen, as also by the reports of the proceedings on the Continent, particularly by Caviale and Le Roy.

It might be a question whether this operation has suffered in character most from its enemies or its friends; for it has often struck me that much mischief has resulted from the high eulogiums which were passed upon it in early years by those who professed to be its exponents. An amount of success was claimed for it which seemed perfectly amazing, particularly to those who were largely engaged in the treatment of stone in the bladder and of diseases of the urinary organs. These practitioners were well aware of the dangers associated with wounds of the urethra and neck of the bladder, and how a very slight cause, even the introduction of a bougie, might produce serious evil—aye, death itself; and when told that of 250 cases of lithotrity, only two or three had been unsuccessful, they naturally felt much astonished; for in venesection itself—then one of the commonest and simplest operations in surgery—it was doubtful if such immunity from evil could be claimed. It was no wonder, then, that when some of our surgeons became a little familiar with cases under their own observation—occurring in their own practice or even in that of professed lithotritists—saw that sometimes a patient's sufferings were greatly aggravated, that sometimes death ensued after the operation,—they looked with suspicion on its much-vaunted claims. Instead of being free from danger, and successful in almost every instance, the reverse was so often the case that friends hesitated, and opponents loudly exclaimed against it. In the whole of my professional experience I know not of a useful operation which has been so shamefully overpraised and thereby damaged in character. If lithotrity could have spoken, it would have said, "Save me from my friends!" As years have rolled on, opportunities have enabled us to judge of its merits and defects more impartially, and I trust the time is not far distant when we may have more reliable data than have hitherto been made public on which to form an opinion as to its usefulness.

I believe that the early experience of lithotrity in this country greatly discouraged our surgeons; for with all the skill they could apply, their hopes and expectations were disappointed, and in consequence the operation was in a manner neglected, and made but slow progress amongst us. With the exception of an essay by Mr. Aston Key, and another by myself, it might be said with truth, that little but casual notice had been taken of it by practitioners in these Islands, although attention had been so strongly, forcibly invited by

Heurteloup and Costello, who, as strangers, did more than all our surgeons together to further the progress of the operation. These gentlemen used a hammer to force one of the blades against the stone, and, it is a singular fact, that the lithotrite now in general use, as constructed by Weiss, had been some time before actually laid aside at the instigation of Sir Benjamin Brodie, because it was thought that the fragments of stone flying from the blades might stick in the mucous membrane of the bladder, and cause additional irritation. But this, like many other fallacious ideas, was soon recognized as a mistake, and Sir Benjamin himself, with the very instrument in question, became the most distinguished British lithotritist of the day.

I have often wondered how it was that surgeons of this country took so slowly to lithotripsy. Brought before them, as it was, with the highest imaginable character for safety and comfort, it seems strange that it should not have been adopted at once, when it was intended to supersede the difficult, formidable, and often fatal operation of lithotomy. I believe that when men came to see the operation in its results, as well as in its performance, and were no longer led by reports only, a feeling of disappointment largely prevailed. It was not so free from pain, trouble, and danger as had been alleged. Death came when little expected. Inflammation of the mucous membrane of the bladder, fever, disordered urine, retention, were no unfrequent results. The pain attending the use of the instruments was hardly to be borne in some cases; and these results had been so little referred to in the early reports of the operation that surgeons were taken by surprise, and could not but contrast the smooth after-progress of lithotomy, where the operation was successful, with all the distress evinced in frequently repeated lithotripsy in the same case. No doubt the awkwardness of manipulating with new instruments for a new operation had some influence. Then, too, I imagine that those in our ranks who had already become adepts in lithotomy were in some degree reluctant to give up the most brilliant operation in surgery; and younger men, looking to the laurels won by their predecessors, still clung to the exciting memories of lithotomy.

But it is characteristic of progress and civilization that that which seems best at one time is set aside and forgotten by advancing improvements. At no period of the history of man has this been so conspicuous as in the present century; and the zeal of those who practise surgery has been no less in proportion than that of those who deal with other great things of the day. Within these forty years, an operation, in a manner hallowed by the antiquity of two thousand years or more, has been largely superseded by a process whose seeming simplicity appears in a manner to set it out of the category of an operation. I may now add, that the seeming apathy of the profession in this country has been amply counterbalanced by the valuable writings of Brodie, Coulson Thompson, Hawkins, and in the text-books of our surgical teachers of the day.

I have already, in former lectures, characterized the procedure as one of the greatest additions to modern surgery. However brilliant

an operation lithotomy may be, there are horrors, associated with it, enough to appal the strongest mind, either in patient or surgeon. Indeed, the latter from his experience knows them so fully that in the conscientious discharge of his duties he lends a willing ear to any proposal intended to simplify or to set aside the process altogether. Lithotrity has yet proved by far the most perfect substitute: and, although I believe that it falls short of the superiority at one time claimed for it, yet I am fully convinced that among the great operations in surgery there is probably none so deserving of the study of those who are likely to be called upon to treat stone in the bladder. It is curious to notice how differently operations in surgery are estimated by different men. Thus, within the last twelve months, one of the ablest hospital surgeons of London has publicly stated it to be his opinion, lithotrity is so simple in its performance as scarcely to be worthy the name of an operation, whilst another surgeon of equal standing maintains that its difficulties can hardly be over-estimated. My own experience leads me to hold this latter opinion emphatically, for I know not any process in surgery requiring more forethought, knowledge, manipulative skill, and after-judgment. It must be admitted that in some instances the simplicity appears extreme; but others show very differently; and as exigencies often arise when they are least expected, the surgeon can never cease to watch with anxiety the varied progress of most such cases.

It has always appeared to me that the modern surgeon, whilst he has had increased powers given him over this painful disease, has also had increased difficulties in deciding upon his line of practice. Formerly, when a stone was detected and patient and surgeon had come to the conviction that an operation held out the only hope of relief, there was not a question as to the nature of the proceeding: lithotomy, as a matter of course! The varieties in this operation, to be preferred or avoided in accordance with the views of individual operators, occasioned no special anxiety, and little was thought of except the known difficulties and dangers of the operation. If the event was fatal, still (the operation having been properly performed), the surgeon was satisfied, that the best that lay in surgery had been done for his patient. There was no after-thought, but that the sufferer, without such an operation, must have lived and died in miserable pain. But now, the first thought is, what operation shall be selected, and at once the modern difficulty is raised. There are still, and possibly there may always be, the professed lithotomist and the professed lithotrist. Notwithstanding all the boasted success of the latter, every honest man of experience must admit the dangers and other lesser evils of the method of crushing.

None but fools or knaves affect any such superiority in result as was alleged in the early days of this operation. With those who profess all for one operation or the other there is no difficulty. It must be cutting or crushing. But, happily, surgery now stands on higher ground than this easy method of decision implies. A first class surgeon of the present day cannot be allowed a right to be only

the lithotomist or lithotrist. He must hold the balance between the two operations, and decide as best he can, which of the two shall be selected. That is the question, and a mighty difficult one indeed it often is. The after-comfort of the patient, even life or death, often hang upon the decision. I confess that my experience, instead of lessening my hesitation on this question, has rather added to it, and I am now more diffident in forming a decision than at a time when my experience was not so full. It is this very experience which leads me to hesitate. Those who have seen but a little in either way are apt to judge hurriedly and unwisely; for whether success or misfortune have befallen, the data are not sufficient.

What are the circumstances which lead us to our determination? There are few questions in surgery more important, and I fancy that I cannot in this lecture address you on a more interesting subject.

Age seems to me to form a most important element, particularly in the male. It may reasonably be doubted, if better can be done before fifteen, than cutting for stone. The success of lithotomy in young subjects is probably greater than could be secured by lithotripsy in similar cases. Taking my own experience, announced last year, of only two deaths in fifty operations, I have no hesitation in stating my conviction that I could not have had equal success with lithotripsy in these cases. In some the process would have been well-nigh impossible, such as with stones of this bulk [specimen of large stone shown], for here the diameter of the urethra would have precluded the use of a lithotrite of sufficient power. Looking to the size of the urethra in the male before puberty, its length, its irritability; the comparative irritability of the bladder and of the subject generally; and I may add, the conical shape of the bladder, whereby there would be a greater tendency to blockage and retention than in the adult, I feel justified in stating, that where the operation might require repetition, it would certainly, although ever so successful, be attended with an amount of distress to the patient, and probable trouble to the surgeon, far greater than any supposed advantage. I confess, however, that I do not think this question has been investigated. Until within these few years there were no instruments that could have been used in such cases. To the best of my knowledge there were none such as I displayed in this theatre last year, but if blades like these [showing a variety] could be brought against small stones such as are usually found in young persons, so as to effectually crush them to sand, I believe that this operation might, after all, be found more generally applicable in children than it is usually deemed. As an adjunct to this kind of practice, chloroform would be indispensably necessary; without it, the needful quietude could not be secured.

In the female, whether under or over puberty, I consider that any other operation than lithotripsy should be an exception to the rule. With various sized instruments sufficient strength of blades can be calculated on; and chloroform will permit the ready use of both crushers and scoops; so that, in accordance with views which I laid before

you last year, the operation might be completed in all ordinary cases on one or two occasions.

But stone is found in the adult twice as frequently as in the young person, and, for manifest reasons, its treatment in such patients must be held as of more than double importance. It is of greater interest to consider what is best for this larger class of cases, particularly as the rate of fatality in lithotomy rapidly increases after puberty, and it is chiefly in these instances that the question between lithotritry and lithotomy arises.

There are, I suppose, surgeons in this country who still look upon lithotomy as the rule, and lithotritry as the exception. Yet I believe there is a generally felt impression that the reverse should now be held as the rule; and such is my own conviction. When stone requires mechanical treatment, lithotritry should be the first proposal, and if it cannot be, then lithotomy must be thought of. If such be the predicament, let us see by what process of reasoning the surgeon may come to such a conclusion. He will have examined his patient, and found the urethra narrow and irritable; the neck of the bladder and mucous membrane particularly sensitive; the prostate somewhat large, and so firm in substance that it has been difficult to pass a sharp-curved instrument; the bladder disposed to throw off its fluid contents; the stone large, perhaps more than one; and possibly withal an irritable temperament, a want of moral and physical courage, with a disposition to oppose, rather than facilitate, all manipulations. These conditions where present, hold out most unfavorable prospects for the satisfactory or successful issue of lithotritry, and it is, to me, very doubtful if the operation should be resorted to in such cases. Yet it would be unwise to reject lithotritry in all at a first or second examination. It is remarkable how, in some, these conditions become modified. The patient may pluck up better spirit, the parts by usage may become less sensitive, the operator by custom may manage to get through the prostate more readily, and the fragments may possibly be more easily dealt with than the entire stone. All this may happen, yet it must be admitted that the conditions referred to induce, at first sight, serious objections to lithotritry.

It is a good custom, in many instances, to make repeated examinations before a final decision; for whilst the opposing indications may in some be favorably modified, it will occasionally happen that where at a first glance all may have appeared highly propitious to lithotritry, a condition may arise which will at once put an end to all idea of resorting to it. I have seen illustrations frequently of both these changes, and have sometimes been much struck with the effects of what may be called preliminary manipulative treatment. It frequently seems desirable to dilate the urethra with bougies before crushing, and their use is often advisable to relieve irritability—a result of which we have daily cognizance in treating strictures; but as in such cases, we every now and then see considerable fever excited, and a train of symptoms particularly alarming to those who have little experience, so in using bougies preliminary to lithotritry, some trouble-

some symptoms may arise which may induce the surgeon to be unwilling to adopt that procedure. After the bougie the patient may in a few hours experience a chill; shivering sickness, and vomiting may all ensue to a considerable extent; the surface of the body may become remarkably pale and cold, the pulse will be very feeble, the eye will appear sunken, the voice will be as in a whisper, and it will seem as if rapid sinking had set in. After a few hours the rigors will cease, and so will the sickness; the pulse will improve, and so will respiration. A reaction will take place, almost as alarming to the inexperienced as the previous condition. There will be rapid breathing, a bounding pulse, a flushed surface, particularly of the face, and a racking headache. Profuse perspiration will then set in, and most of the alarming symptoms will disappear. The kidneys and bladder will sympathize. At first there will be scanty and high-colored urine, and when it becomes more profuse, as it does in the latter stages, it will deposit a thick sediment, and possibly a copious quantity of tenacious mucus, in some instances joined with pus. In eight and forty hours the patient may be as well as ever, but in some there will remain a great disposition to a recurrence of most or all of these evils. Such symptoms as these are by no means uncommon after lithotrity, and they cause much distress to the patient and anxiety to all. Every one experienced in stricture cases must be more or less familiar with them. When, a few years ago, perineal section was more in fashion than at present, such symptoms were not unusual, and to the uninitiated caused great alarm; yet, though formidable in aspect they were not always so in reality. Once passed off, they seldom recurred, chiefly, perhaps, owing to the cause which had induced them not being repeated. Now, if such evils are brought on by the simple use of a bougie, what might not happen after a single sitting of lithotrity?—what after frequent repetitions? A man could scarcely feel justified in subjecting his patient to lithotrity after such experience as this. I have repeatedly declined it, and have afterwards seen the best results from lithotomy. If a stone be small, and it be possible to make away with it at a single operation, I should not mind advising lithotrity on a very brief acquaintance; but if the operation is likely to require two or more sittings, then I should think it wise of the surgeon to test, as it were, his patient's constitution by a repeated preliminary use of a bougie or sound.

As yet I have referred only to the cases likely to be rejected for lithotrity. Let me now speak of those which seem peculiarly favorable for the process. If the urethra be wide and free from marked irritability; the neck of the bladder and mucous membrane of that viscus be not particularly sensitive; if the prostate be of normal or moderate size, and so soft that a sharp-curved sound, or lithotrite, can be readily passed, the case will appear in most respects favorable. If, added to this, the stone be small, then all the essentials to successful lithotrity may be deemed present, and it is not likely that the bladder will be subject to spasm, nor will the patient evince much irritability either of mind or body. Even though the stone should be of considerable

magnitude, or should two or more be present, there need be no hesitation in selecting lithotrity. It may be that evil may come after all, but under such circumstances the surgeon may feel satisfied that he has done the best for his patient that human judgment could dictate. Should he in the interval have had, or seen, one or more successful cases of lithotomy, he need not repine and wish that operation had been selected instead, for had it been, the results might have proved equally disastrous.

When lithotrity is seen in perfection, it certainly is a vast triumph of surgery. A concretion, too large to escape by the natural passage from the bladder, and which, when allowed to remain, almost certainly increases in size, and thereby adds to the daily and hourly sufferings, is broken into fragments so small that they pass away with the ordinary stream of urine; and thus the bladder is left free and in a normal condition. The patient need not be in bed an hour beyond the customary period of rest, and may move about, attending to his ordinary duties as usual. He may walk to the surgeon's house and from it, as if paying a friendly visit, and in a few days or weeks have his mortal foe within his manual grasp, shattered to fragments, and impotent for further evil!

This is, indeed, a glowing picture, and happily one which is frequently realized. Modern surgery is justly proud of it. But dark shades and obscurities often arise to mar the effect, and I fear we have heard less of these than of the brighter aspects.

Entertaining as I do most favorable views of lithotrity, I yet must say that the choice for good or evil between it and lithotomy is more nearly balanced than some imagine, and that when each operation is properly, even perfectly performed, the effects and results are often beyond the surgeon's control. Of the two lithotrity certainly appears the least hazardous. I believe myself, from my own experience, that it is so; yet, when least expected, the worst may befall, and thus the most enthusiastic hopes may be readily broken.

A very slight abrasion, scratch or laceration, may set up in certain cases a train of evils such as I have already depicted. Mischief does not follow as a matter of course, but it is more likely than if no abrasion were present. Hence the advantage of a light touch, and of light well-proportioned instruments. It must be admitted, however, that experience has shown that neither bladder nor urethra seems much affected in many instances, even when laceration has been considerable. But what shall be the result I fancy no man can predict; we can only appreciate it after the operation. It may, in many cases, be a nice question, whether the injuries, say in contusions, nippings, and lacerations inflicted by instruments, or the presence of angular sharp-pointed pieces of stone and sand, are the most frequent causes of the evils likely to follow lithotrity. Sometimes it will be one, sometimes the other; and doubtless, in many, there will be a combination. My impression is, that as the original stone, from its earliest stages to the time it has been attacked, has been the cause of suffering which has brought the patient into the surgeon's hands, the frag-

ments are the most frequent cause of after-mischief. No doubt their asperities, if they remain long in the bladder, are in most instances blunted by mucus and new deposit; but just as the first nucleus may have produced evil, so may these various fragments add accumulated mischief. The sooner these are disposed of, then, the better for the patient. Doubtless the smaller the fragments, the greater is the chance of their escape; but whether small or large, they are apt to lie behind, and there are few nicer questions in lithotrity than whether these should be left to undergo spontaneous extrusion, or be so handled by the surgeon as to ensure their immediate removal. In my lecture on this subject last year, I expressed a strong opinion on the advantage of removing fragments, and additional experience has added strength to my convictions. No doubt, in most cases, fragments come away spontaneously in a satisfactory manner, but even in many of these, the cure would be rapidly expedited were such means taken as I have described in the lecture referred to. I need not at present dwell on that subject, but I repeat that the practice cannot be followed without the slender instruments then described, and some of which I now exhibit. With those in common use nothing of the kind can be effected.

Certain dogmas have prevailed regarding lithotrity which had been hurriedly fixed, but which have now been dispelled by experience. Thus it was said that the operation was scarcely practicable or proper unless eight or twelve ounces of fluid could be retained; indeed, the more the better! This was under the impression that the stone could be more readily seized, and that the distended mucous membrane would be less likely to be nipped between the blades, or between these and the stone. If sufficient urine were not already in the bladder, the first step of the operation was to inject tepid water. Now I think it may be set down as a rule that a capacious bladder and large quantity of water are objectionable. They certainly do not preclude the operation, but they assuredly make it more difficult and uncertain. A stone or fragment moves so freely in a large quantity of water, the slightest touch causing it to change its position, that it readily eludes the blades; and, again, where such a bladder as is here implied is nearly empty, the mucous membrane may possibly be in folds, between which fragments are liable to escape the closest search. To say the truth, however, I have little faith in the presence of so-called folds of the mucous membrane of the bladder. For twenty years or more I have rarely used injections as a preliminary step, and I have often drawn off urine with a catheter when, in accordance with these views, I have fancied the quantity too large. A small proportion of fluid is decidedly better than a large, but care should be taken that the blades of the lithotrite can be used with facility, and without the chance of contusing and abrading the mucous surface.

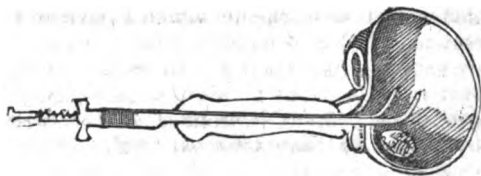
Paralysis of the bladder such as requires the daily use of the catheter has been generally considered a positive bar to lithotrity.

But with the small scoops which I have recommended the condition is positively favorable to that process; for there is generally in such cases an apathetic state of the mucous membrane, which permits a free use of instruments required for the removal of fragments.

Some years ago we were, on nearly the highest authority, positively prohibited from turning the point of a lithotrite downwards behind the prostate gland. If this organ be somewhat enlarged, particularly in its middle lobe, there is always a kind of pouch behind; and even when of its normal size the bladder in old persons is capacious at this part. Doubtless as a patient stands, the stone usually lies in this place. Even in the horizontal position it keeps there, unless the pelvis be raised. In early days it was the custom to lower the shoulders and elevate the pelvis, for the sake of getting the stone towards the upper part of the viscus, where it was thought it could be more readily and more safely caught. Occasionally even yet this position seems desirable; but the fallacy of not searching behind the prostate has been long since exploded. The best of modern sounds, that with the short curve recommended by Heurteloup, was constructed with the view of being turned point downwards in this pouch and to catch a small stone or fragment with a lithotrite or scoop, there is no more certain manœuvre. These two sketches illustrate my meaning.

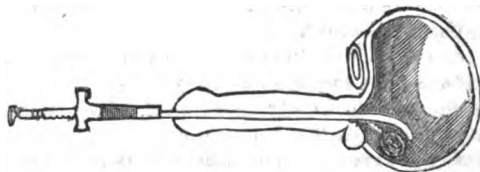
Fig. 1 shows the lithotrite with its beak upwards, in a position not

FIG. 1.



likely even to touch the stone; the other (Fig. 2) shows the blades

FIG. 2.



pointed downwards, so that if opened and dipped a little lower they

could not fail to catch it. Further, I can affirm, from ample experience, that there is no more risk or danger in moving the blades here judiciously than in any other part of the bladder.

The attitude of a patient, the question if he was to lie on a bed, a sofa, or on a table, made expressly for the purpose, were all thought matters of very great importance. Every now and then some little variety of attitude, from the horizontal to the erect, is all-sufficient. A pillow under the pelvis is sometimes an advantage more, however, to keep the handle of the instrument above the mattress than with the intention of influencing the position of the stone. In hospital practice the ordinary operating table answers all requisites, and that constructed for the special purpose of lithotomy may now-a-days be considered as a remnant of a certain amount of claptrap which was associated with the early history of the operation.

The question as to the propriety of giving chloroform in lithotomy seems still a mooted one in certain quarters; but I have none regarding it, and having used it in the greater number of the cases I have had ever since anæsthesia was introduced, I can speak of it in unqualified praise. There are many instances in which it is not requisite, but I am certain that without it, the operation would be well-nigh impossible in a considerable number.

But, Sir, the subject of lithotomy cannot be treated as I think it deserves without reference to lithotomy; and such further remarks as I wish to make I must reserve until I speak of the latter theme, which I intend to do at my next lecture, when I shall state the results of that experience which has enabled me, from my own practice, to form this collection of calculi, which I have now the honor to place before you.

2. *General Resumé of the Sick and Wounded of the Confederate States Army under Treatment during the Years 1861 and 1862.*

From all the reports filed in the Surgeon-General's office for the years 1861 and 1862, exclusive of the few scattering ones which reached us from the Trans-Mississippi department, we are enabled to sum up the sickness and mortality occurring in the southern armies during the late war as follows:

Continued Fevers.—Field reports, 36,746 cases and 5,205 deaths. Hospital reports, 40,565 cases and 7,020 deaths.

Paroxysmal Fevers.—Field reports, 115,415 cases and 848 deaths. Hospital reports, 49,311 cases and 485 deaths.

Eruptive Fevers.—Field, 44,438 cases and 1,036 deaths. Hospitals, 32,755 cases and 1,238 deaths.

Diarrhœa and Dysentery.—Field, 226,828 cases and 1,696 deaths. Hospitals, 86,506 cases and 1,658 deaths.

Pulmonary Affections.—Field, 42,204 cases, 3,534 deaths, and 4,588 discharges from service. Hospitals, 36,988 cases, 4,538 deaths, and 1,135 discharges.

Rheumatism.—Field, 29,334 cases and 1,142 discharges. Hospitals, 30,438 and 700 discharges.

Gun-Shot Wounds.—Field, 29,569 cases, 1,623 deaths, and 498 discharges. Hospitals, 47,724 cases, 2,618 deaths, and 742 discharges. Killed in battle, 8,087.

All other Diseases.—Field, 324,321 cases and 2,278 deaths. Hospitals, 123,402 cases and 1,802 deaths.

Whole number of cases exhibited in the field-reports during 1861 and 1862 was 848,555; of which 16,220 died and 10,455 were discharged from service. There were admitted in hospitals for the same period 447,689 cases; of which 19,359 died and 6,485 were discharged. Total deaths in two years, 35,579.—*C. S. Med. & Surg. Jour.*

3. Compound Fracture of the Thigh Treated without Amputation.

	Recoveries.	Deaths.	Days.	Inches.
Average period of recovery.....	116	105	104	
Greatest period of recovery.....	-	-	255	
Least period of recovery.....	-	-	41	
Average period of death.....	-	-	52	
Greatest period of death.....	-	-	186	
Least period of death.....	-	-	1	
Average amount of shortening.....	-	-	-	1.9
Greatest amount of shortening.....	-	-	-	5.0
Least amount of shortening.....	-	-	-	0.5

C. S. Medical and Surgical Journal.

4. On the Surgical Treatment of Painful Menstruation.

To the Editor of The Lancet:

SIR—Please allow me to say a few words in answer to the communication of my friend Dr. Bennet, published in *THE LANCET* (September No., page 425), "On the Surgical Treatment of Painful Menstruation."

If I have had any misgivings as to the worth of my "clinical notes," they may now be considered at an end. For when so many eminent men step out of the beaten track to discuss their soundness, it is almost a guarantee that there is truth at the bottom, the whole of which they cannot at once accept, because it does not tally with old preconceived notions.

I am ready to acknowledge my obligations and the debt of gratitude I owe to Dr. Bennet as the father of a correct uterine pathology. In my own country he is *par excellence* the author that we all follow; and his excellent book (like those of Fergusson, Coulson and Druitt) is found in the library of every well-read medical man. But while we accept Dr. Bennet as a light and a guide, we are independent enough *non jurare in verbi magistri*, and we question in many things the soundness of his teachings, and in nothing more than on this very subject of dysmenorrhœa.

My friend thinks that he settled this question many years ago; but I shall be greatly surprised if it is definitely settled in the next generation. The fact is that the pathology of dysmenorrhœa is yet to be written. It is simply a sign or symptom of disease, the result of organic change. That organic change may be inflammation, or it may exist independently of it. But whether inflammatory or not, its action is mechanical. I lay it down as an axiom, that there can be no dysmenorrhœa, properly speaking, if the canal of the neck of the womb be straight and large enough to permit the easy passage of the menstrual blood. In other words, that there must be some mechanical obstacle to the egress of the flow at some point between the os internum and the os externum, or throughout the whole cervical canal.

Dr. Bennet says, "I have always taught that menstruation may be painful, even acutely painful, from its dawn to its close, without any mischief or impediment existing of any kind whatever." Many years ago I believed all this, simply because Dr. Bennet said so; but now I do not believe in any such doctrine, because a large experience has disproved it in every particular. There is no such thing as what Dr. Bennet calls "constitutional dysmenorrhœa." There was a time when we looked upon dropsy as an entity, a disease in itself; but now we know that it is only a symptom of various diseases. It is a symptom of disease of the heart, of the kidneys, of the liver, of the spleen; or it may follow hæmorrhages, diarrhœa, &c. So is it with dysmenorrhœa: it is only a symptom of real disease. It may be inflammation of the cervical mucous membrane; retroflexion; ante-flection; fibroid tumor in one wall of the uterus or the other; contraction of the os internum or os externum; flexures of the canal of the cervix; either acute or gently curved, either at the os internum, at the insertion of the vagina, or extending throughout the whole length of the canal; all of which are but so many mechanical causes of obstructions, which must be recognized and remedied if we expect to cure the dysmenorrhœa. We do not talk of constitutional toothache, of constitutional colic, or of constitutional fractures, or constitutional dislocations; nor should we speak of constitutional dysmenorrhœa. This is but a high sounding term that means absolutely nothing. The fact is that most of the diseases of the uterus are as purely surgical as are those of the eye, and require the same nice discrimination of the true surgeon; and if we fail to detect the abnormal condition that produces diseased manifestations, whether

of sensation or secretion, it is plainly our fault. For of all organs, the uterus is now most subservient to the laws of physical exploration; and in every case of diseased action, if we cannot map out accurately the peculiar condition of the uterus accompanying it, it is simply because we do not apply our knowledge of those physical laws to its investigation.

But while Dr. Bennet theoretically opposes so strenuously the "mechanical theory of dysmenorrhœa," he acknowledges it in fact, for he says that "dysmenorrhœa showing itself in women who have not had it before, or aggravated when constitutionally present, is, I firmly believe, very much more frequently the result of morbid conditions, of chronic inflammations of the cervix and of the body of the uterus, than of physical obstruction in the cervical canal. When that *obstruction or contraction* exists, it is usually the mere result of the swelling of chronically inflamed or hypertrophied tissues, and disappears without any operation when the inflammation has been removed," &c.

There is no difference of opinion between us here. I have seen just eight cases of this type out of one hundred and twenty-nine cases of dysmenorrhœa.

Again he says: "If very severe, so much so as to cast a gloom over life, either in unmarried or in married women, it is usually connected with inflammatory disease of the uterus, which is also generally the cause of the *narrowing of the cervical canal*." He very properly tells us to treat this inflammation, and as it subsides, "generally speaking the cervical passages open, and a natural cure is produced. If they do not thus open, dilatation really becomes necessary, and should be carried out one way or another."

This is at once yielding practically to the whole "mechanical theory of dysmenorrhœa." He acknowledges this "mechanical theory" throughout his entire article, for he advocates the use of sponge-tents in all cases in which he does not recognize a narrowing of the cervical canal by the turgescence of the inflamed mucous membrane. Why should he resort to sponge-tents if there are no mechanical barriers to overcome? He gives numerous cases illustrating this mechanical treatment, yet he opposes a "mechanical theory."

It seems that Dr. Bennet has for the last twenty years been overcoming mechanical obstructions in the cervix, at one time by Simpson's metrotome and intra-uterine pessaries, with which he "obtained good and permanent results," but subsequently by sponge-tents.

The only difference between us, seems to be, that he opposes the theory of mechanical dysmenorrhœa, but adapts his practice to it, while I permit theory and practice to go hand in hand.

But the real object of the Doctor's paper seems to have been to object to my method of enlarging the os uteri. He talks of "bifurcation" "of slashing operations," "the more severe and serious operations" &c. He seems to have created a windmill out of my operations, and started off to demolish it. But this operation is "not slashing," indeed it is the only one proposed that is not "slashing." It is

a simple snip on each side of the os, with a subsequent superficial incision on each side of the cervical canal, made with great caution, and which I demonstrated before the Obstetrical Society of London at a recent meeting, showing wherein it was more precise, more surgical, and less apt to be followed by accident than any other operation of the same nature, and that while the incision of the os tincæ was about the same as by Dr. Greenhalgh's metrotome, the cutting internally was less. It is not by any means a painful operation. Dr. Bennet has not seen it performed, and draws on his imagination as to its terrors. I well remember how I held my breath in awful suspense when I first read the account of the passage of a freighted train of cars over the suspension bridge at Niagara falls; but when I visited the place six months afterwards, and passed over it in person, I had not the slightest feeling of dread. This was due to the difference between imagination and reality.

I am, sir, your obedient servant,

J. MARION SIMS, M. D.

Bolton-row, May-fair.

CLINICAL LECTURES.

1. *Clinical Remarks on Gun-shot Wounds of Joints, delivered January 10th, 1866, at Howard's Grove Hospital.* By HUNTER McGUIRE, M. D., Professor Surgery Va. Medical College.

I show you to-day, gentlemen, a case of accidental gun-shot wound of the knee-joint. * * * * * All surgeons, both civil and military, agree that a gun-shot wound of a joint is a grave and serious affair—the gravity of the injury varying according to the character and size of the joint. An injury to a hinge-joint—other things being equal—is more dangerous than one occurring in a ball-and-socket articulation, and wounds of the hip, knee and ankle, more dangerous than those of the hand, elbow and shoulder. Gun-shot wounds of the smaller joints frequently do well, under simple treatment, but recovery even here is tedious and generally painful. I have seen many excellent cures follow gun-shot wounds of the fingers and hand, which involved, but did not otherwise seriously injure the joint. The usefulness of the member is impaired but not destroyed. From many cases which I now call to mind, I select the one which happened to General Jackson at the first battle of Manassas. I do this, because anything connected with this distinguished General is full of interest. When he made the celebrated charge with his brigade, which turned the fortune of the day, he raised his left hand above his head to encourage the troops, and while

in this position, the middle finger of the hand was struck just below the articulation between the first and second phalanges. The ball struck the finger a little to one side, broke it, and carried off a small piece of the bone. The upper fragment was split longitudinally and the articulation opened, but the joint was not otherwise injured. He remained upon the field, wounded as he was, till the fight was over, and then wanted to take part in the pursuit, but was peremptorily ordered back to the hospital by the General commanding. On his way to the rear the wound pained him so much, that he stopped at the first hospital he came to, and the surgeon there proposed to cut the finger off; but while the doctor looked for his instruments, and for a moment turned his back, the General silently mounted his horse, rode off, and soon afterwards found me. I was busily engaged with the wounded, but when I saw him coming, I left them and asked if he was seriously hurt. "No," he answered, "not half as badly as many here, and I will wait." And he forthwith sat down on the bank of a little stream near by, and positively declined any assistance until "his turn came." We compromised, however, and he agreed to let me attend to him, after I had finished the case I was dressing when he arrived. I determined to save the finger if possible, and placed a splint along the palmar surface to support the fragments, retained it in position by a strip or two of adhesive plaster, covered the wound with lint, and told him to keep it wet with cold water. He carefully followed this advice. I think he had a fancy for this kind of hydropathic treatment, and I have frequently seen him occupied, for several hours, pouring cup after cup of water over his hand, with that patience and perseverance for which he was so remarkable. Passive motion was instituted about the twentieth day, and carefully continued. The motion of the joint improved for several months, after the wound had healed, and in the end, the deformity was very trifling.

During the treatment, the hand was kept elevated and confined in a sling, and when the use of this was discontinued, and the hand permitted to hang down, there was, of course, gravitation of blood towards it. Under the circumstances, you would expect this. In consequence of it, however, the hand was sometimes swollen and painful, and to remedy this, he often held it above his head for some moments. He did this so frequently that it became at length a habit, and was continued, especially when he was abstracted, after all necessity for it had ceased. I have seen it stated, somewhere, that whenever, during a battle, his hand was thus raised, he was engaged in prayer; but I think the explanation I have given is the correct one. I believe he was the truest and most consistent Christian I have ever known, but I don't believe he prayed much, while he was fighting.

Gun-shot wounds of the larger joints, involving the ends of the bones, almost invariably demand operative interference. When it occurs in the upper extremity, and the injury to the soft parts is not too extensive, the larger vessels of the limb being unhurt, and you

think the patient's general condition justifies the operation, you should resort to excision in preference to amputation. I refer to the general health of the patient, because it is necessary to consider this, as well as the nature and extent of the injury, before deciding the character of the operation. I believe the shock and traumatic fever following excision of joints, is greater than that of amputation. Recovery is certainly slower, and the system is never heavily taxed by suppuration. This is always profuse, even in the cases which recover most rapidly; and I found it usually necessary, not only to husband all the patient's strength, but to assist him, during the latter part of the treatment, with tonics and stimulants. Another thing you must remember: this matter which I tell you is so abundant, sometimes collects in the wound, and seriously interferes with the cure. This is especially liable to happen when the wound is not dependent, and cleanliness is not observed. You should try to prevent it, or if it does happen, make a free and early opening, and let it out. The results of this operation at the elbow and shoulder joints are usually very gratifying. In excision of the elbow, the arm is especially useful when you can save the insertion of the biceps and brachialis muscles, and the limb is also valuable, when recovery takes place, after excision is performed at the shoulder and a large portion of the shaft of the humerus is removed. I took the trouble, at one time, to collect the results of seventeen cases of this operation at the shoulder. I had some difficulty in following up these cases, when they left the field infirmaries for hospitals in the interior, or their homes. I spent a good deal of time and labor upon the reports, and of course considered them valuable; but I had another proof of their worth: some of Gen. Sheridan's officers paid me the compliment of retaining them. One of the cases I allude to, occurred in the person of that gallant soldier, Col. Dulaney, of the 7th cavalry. He was wounded near Strasburg, in one of the cavalry fights which took place near that town, during the last Valley campaign. The ball struck him upon the front of the arm, about an inch below the shoulder joint, and passed directly through, badly comminuting the bone. That night he rode upon horseback thirty miles, supporting the wounded arm with the other hand, and taking with him a soldier to guide his horse. The night was cold, the road very rough, and you can imagine how much this brave man must have suffered. After consultation with Dr. Black—the surgeon who made, and who so well deserved it, too, such an enviable reputation during the war—I performed excision of the joint. The straight incision was made, which, for many reasons, I am sure is the best, and some loose pieces of bone and the head of the humerus removed. I was surprised, when I came to the lower fragments, to see how extensively the bone was injured. I found it fissured and broken for some distance below the insertion of the deltoid muscle, but in a way which prevented my detecting it before the operation. I was obliged to remove between four and five inches of the shaft, besides the head. You should never leave any injured portion about this end of the bone; for it is here that you are to

look for any trouble which arises during the after treatment. Inordinate inflammation, abscesses, necrosis, or other mischief occurring after the operation, is almost sure to be connected with this end of the bone. In this case, I would have amputated the arm at once, if I had known how far the fracture extended, and how great the dissection would necessarily be. I have had, however, no reason to regret the operation. I did another thing here, the propriety of which I had doubted, from what I had seen in other cases, and which I shall not do again, unless I get better proof of its utility. I left as much of the periosteum as I could, carefully stripping it from all the larger fragments wherever it was attached to the soft parts around. I think it only added to the suppuration, and did no good. This patient remained under my care for about five weeks, when he was sent to the rear, and fell into the kind hands of Prof. Davis, who attended him till he was well. I was informed, not long ago, that the arm was very useful, the Col. being able to hunt and shoot, and play a good game of billiards.

Although the limb is often of great service after excision of the joints in the upper extremity, such is not the case with the lower. Wounds, occurring upon the field of battle, seriously involving the ankle or knee-joints, demand amputation. You can see at a glance why this should be so. * * * * * I do not think you should hesitate about amputation in preference to excision, under such circumstances. I amputated Gen. Trimble's leg at Gettysburg for gun-shot wound of the ankle-joint. He had taken the place of poor Pender, who was wounded and afterwards died, and had been in command of the division only an hour or two, when he was shot. A minie ball struck him upon the external malleolus, passed through the joint, and came out a little in front of the inner malleolus. He had been wounded before in the same limb, at the Second Manassas, by an explosive ball, which, after entering the leg about three inches above the ankle, burst in the tibia, and badly lacerated the parts. There were three distinct openings made by the exit of the fragments of the ball. A surgeon was about to amputate his leg, when I arrived and advised him to attempt to save it. He took my advice, and in a few months after the General reported for duty, though he was not entirely well. As soon as he was wounded at Gettysburg he sent for me again. I found him in great distress—more, I think, at losing command of the division so soon, than at the prospect of losing his leg. He was an eccentric man, but a brave soldier. He got well eventually, and now wears an artificial leg, which is far more serviceable than his own would have been, after excision of the joint, under the most favorable circumstances.

[The rest of this lecture, referring entirely to gun-shot injuries of the knee, will be concluded in the next issue of this Journal.—Ed.]

2. *The Diagnosis of Chronic Mammary Tumors.*

The removal of a scirrhus tumor from the breast of one woman and of a mammary glandular tumor from another, gave Mr. Paget an opportunity, a week ago, of pointing out some of the broad features which distinguished the two conditions. The glandular tumor, he remarked, was not only very movable, but seemed to move about freely in the substance of the breast. The scirrhus tumor, on the other hand, could be moved, but not in this way; the breast was carried with it. A long dissection, occupying perhaps three-quarters of an hour, would have been necessary to isolate the scirrhus tumor from its attachments to healthy tissue. The glandular tumor was invested by a complete capsule, so that it was instantly "shelled" out and rapidly removed. On section, it was strictly glandular in appearance. Placed under the microscope, the elements of proper secreting structure of a gland could be found, without, however, any ducts.

We noticed that Mr. Paget removed the glandular tumor by a process analogous to that which is often adopted in cases of sebaceous tumors. The mass was lifted, and the integuments stretched by the fingers and thumb of the left hand compressing its base. A scalpel, with its cutting edge upwards, was then thrust through the base of the swelling, in its long axis, cutting its way upwards through the tumor and integuments. A very few strokes of the knife were then necessary to remove the mass, which was of the size of a walnut.—*London Lancet.*

ORIGINAL CORRESPONDENCE.

NEW YORK, *January 20th*, 1866.

Among the institutions of this city, from which I shall frequently gather materials for your readers, those belonging to the department of public Charities and Corrections will occupy a prominent place. I will premise, therefore, by giving you some insight to their extent, character, &c. The first and most important of these institutions is the Bellevue Hospital, located at the foot of 26th street and East river. This hospital has a capacity of 1300 beds; during the year 1864, 7491 patients were treated, with a total mortality of 8.5 per cent. Excluding coroners' cases, phthisis and other incurable diseases, and the mortality was but 3 per cent.—a most favorable exhi-

bit for so large a hospital. The hospital is designed mainly for acute medical and surgical diseases, but it has also a lying-in department, in which there were 416 births last year. Bellevue is a favorite resort of medical students; not unfrequently 500 are seen in its spacious amphitheatre to witness surgical operations; the number of registered attendants this winter is 750; clinical instruction is given daily during the session of the schools, and always to large classes. The Bellevue Hospital Medical College is located on the hospital grounds, and has a class now in attendance of over 400 students. This is the fourth session of that school, and its success must be regarded as without parallel. The advantages which a school possesses, with such ample clinical facilities, are patent to every one, and commend it alike to the student and practitioner.

From the wharf at Bellevue a steamer conveys you, within ten minutes, to the Island Hospital, on Blackwell's Island. This is one of the best built and arranged hospitals in this country, and is the second in importance under the charge of the Commissioners of Charities. It is under the same Medical Board as Bellevue Hospital. It accommodates about 1200 beds. A portion of the wards is assigned to venereal diseases, rendering it in fact the great Lock Hospital of New York. The number of patients treated in this hospital in 1864 was 7249. Clinical instruction is also regularly given in this hospital, the students having free passage to and from the hospital by the steamer. Three to four hundred students avail themselves of the excellent opportunities to study syphilis, in all its forms, in this hospital. But a few steps from the Island Hospital is the great Fever Hospital of the department, to which students have access, and where every phase of typhus may be studied. Still farther removed is the Small-pox Hospital, also accessible to students, at which 700 cases were treated in 1864.

Under the same government is the Nursery for Foundlings and Orphans; the Lunatic Asylum, with upwards of 700 inmates; the Children's Home, &c., &c. To appreciate fully these charitable institutions, a personal inspection is necessary. No city can boast of a better system of organized public charity than New York. These institutions are a marvel of neatness, comfort and order, and elicit from visitors commendation in the warmest terms.

In walking through the wards of these immense metropolitan hos-

pitals, the medical visitor is embarrassed with the subjects of interest which present themselves on every hand for his observation and study. Surgery, medicine and obstetrics are practiced in these wards by some of the most eminent members of our profession. Every phase of nearly every disease may be witnessed at a single visit. Recent and improved methods of treatment are practically illustrated, and pathology is taught daily by the attending physicians and surgeons. Selecting such material as is now most recent, as well as familiar to me, I will give a practical turn to these notes by referring to a few points of interest to surgeons.

Ostéo-myelitis has recently attracted much attention in this country, on account of its very frequent occurrence in military hospitals. It was one of the most frequent complications of gun-shot wounds of bones, of amputations, &c. It was no uncommon thing to have four to nine inches of the shaft of amputated bones necrose and separate. It has been very generally believed that this disease does not occur frequently in civil surgery. That this is an error, we are beginning to have some striking proofs. A few weeks since Prof. HAMILTON amputated both arms of a man above the elbow, who was caught between rollers in a machine shop. For several days he was apparently in a fair way to recover, but he was finally seized with a chill, symptoms of pyæmia were rapidly developed, and he sunk and died. Meantime the stumps continued in good condition, without any appearance of local affection. Five years ago this patient would have been adjudged to have died of pyæmia, without any local affection of the amputated bones. To-day we sawed them asunder in their long diameter, and they presented a most beautiful illustration of ostéo-myelitis, in both stumps, from the point of excision to the shoulder-joints. I have little doubt that equally careful examinations, in deaths after amputations, will more frequently reveal this peculiar inflammation of bone than we have heretofore supposed. Does it not justify the conclusion that the whole bone ought more frequently to be removed, or, in other words, that in severe injuries it would be better to amputate at the contiguity than at the continuity of bones?

A few days since, I witnessed an amputation of the thigh by Prof. J. R. Wood, in a case of gangrene of the leg following ligature of the femoral artery for popliteal aneurism. The aneurism became inflamed subsequent to the application of the ligature, and sloughed

away. Soon after, gangrene appeared on the leg, and extended from the toes to the knees. This case was especially interesting to the younger surgeons, as the operation was performed without the use of anæsthetics. Prof. W. remarked that he feared the patient would struggle so much under the influence of the anæsthetic, that he might dislodge the plug formed in the artery, at the seat of ligature. The patient bore the operation manfully, which was quickly and dexterously performed by this skillful surgeon. I was much interested in watching the shock of the operation, and though his pulse continued full, his appearance was that of one decidedly depressed by the operation. There is, I think, a growing apprehension in the minds of surgeons of this city that many of the unfortunate results of operations are due to anæsthetics. It is alleged that it prevents the primary union of wounds, that it induces lung and bowel complications, &c. Would it not be surprising that after nearly twenty years of universal use and unstinted praise, this "greatest boon" to mankind should fall into disfavor? I do not believe, however, that such a fate awaits these agents. In the hands of the judicious surgeon, they will hold the highest rank among remedial measures, and will ever be considered his most valuable and reliable adjuvant in painful and tedious operations.

LONDON, *December 26th*, 1865.

It augurs well for the future of the medical profession in the Southern states, that the energy and scientific ardor of its members should have been sufficient to establish, immediately after the close of a desolating and disastrous war, a first-class Medical Journal in the city which has suffered perhaps more than any other during the whole of the last four years. The history of the military surgery of the war will alone render the Journal highly valuable to the profession, not only in America, but also throughout Europe. Your London correspondent cannot hope to furnish your pages with any topics of interest equal to those drawn from this source. Still the field before me is vast, and the chief difficulty is, where to make a beginning. Perhaps I may as well give you an account of what is really one of

your own cases, but which presented itself to my notice here a short time since.

Last month I saw a man in the out-patients's room of one of our hospitals, who had been a soldier in the Confederate army, and had deserted to that of Grant. While in the latter army he was shot by a conical ball nearly in the centre of the forehead, a little to the right of the median line. The ball passed out through the posterior part of the right parietal bone, fracturing and carrying away a large piece of the bone in its exit. When I saw him, there was a small stellate depressed cicatrix on the forehead, and great part of the right side of the hairy scalp had been destroyed, leaving a large irregular surface, which was for the most part in the condition of firm cicatrix; a small portion still an open ulcer. The bone was felt to be deficient beneath a portion of this surface nearly two inches square, and the pulsations of the brain could be felt. Complete paralysis of the left arm was said to have followed the injury, but, at the time I saw him, he was regaining the power of the limb to a slight degree, and he could walk without difficulty. He was totally blind of the left eye, and the sight of the right was imperfect. On examination with the ophthalmoscope, the optic disc of the left eye was seen to be abnormally opaque and white, probably from fatty degeneration consequent on interference with the nutrition of the nerve. The right eye exhibited a somewhat similar appearance, but considerably less marked.

This case deserves, I think, to be put on record not merely on account of recovery following the infliction of a great amount of injury, but also because the nature of the symptoms shows that important nervous structures were implicated. The ball must have traversed the white substance of the right cerebral hemisphere, and divided some of the fibres, which form the origin of the crus cerebri and of the optic tract, since there was loss of sight and paralysis of motion on the opposite side of the body. It is true that cases in which recovery has followed considerable wounds of the brain, are not excessively rare, but in most of these cases, the injury has been on the surface, and although there may have been considerable loss of gray matter, the white or medullary substance has generally been very little injured, while, in this patient, both the direction of the ball and the nature of the symptoms indicate an extensive wound of the central parts of the cerebral hemisphere.

You have doubtless before this heard something of the "cattle plague," which is justly exciting so much attention in this country. I am scarcely in a position to judge of the interest your readers may take in the subject, but it seems to me quite worthy of attention in America as well as in England. The general public here can hardly be said to take less interest in it than scientific men; for when John Bull has to pay nearly double the former price for his beef, he naturally enough thinks the subject one of National importance. There can be no doubt, however, that the high price of meat is due to other causes than the "Rinder-Pest;" for it has gradually been rising for a long time past, partly on account of the great increase in the amount of butcher-meat consumed by the lower classes, causing a demand far beyond the supply, which latter has had to be supplemented to a great extent from foreign sources. There can be no doubt that the disease which has now become epidemic in England, was imported along with foreign cattle, the Rinder-Pest being apparently endemic in some parts of Russia. The contagious nature of the disorder has been clearly demonstrated, it being communicable both by inoculation and by contamination of the air. It has been communicated to sheep and other ruminants, but unlike glanders and vaccinia, it does not appear to be capable of transmission to man, since although it has spread so widely among cattle, it has not been observed in a single instance in the human being. It was at first conjectured that the disease might be really identical with typhus or typhoid fever, but farther investigation has shown that it is quite distinct from these, though evidently belonging to the same class of diseases, being a febrile disorder propagated by a specific poison of its own, running a definite course, with a characteristic set of symptoms and pathological changes. The disease has proved rapidly and very generally fatal, only a very small per centage of animals recovering; and its contagiousness is so great that whole herds have been destroyed, perhaps only four or five remaining out of as many hundreds.

A Royal Commission has been appointed to investigate the disease, and to recommend such measures as might appear necessary to check its spread. The Commissioners have engaged the services of several men of high standing, in the medical profession, to enquire into the different branches of the subject, and we may hope before long to have their several reports. Meanwhile the Commissioners have re-

ported to the Government the results of their preliminary investigations, and the majority of them have recommended, that in order to check the spread of the disorder, all transit of live cattle should be prohibited in the United Kingdom, by which means the epidemic would probably be limited to the places where diseased cattle already exist, and might be reasonably expected to die a natural death in a few months. This recommendation, however, was not unanimous, and the Government appears either to have been too deeply impressed with the difficulty and inconvenience of such a course, or to have thought too lightly of the evil; for the recommendation has not been acted upon, and the pest appears to be spreading more rapidly than ever. Our cattle are now dying at the rate of nearly 4,000 weekly. Up to Nov. 25th the total number attacked was 33,983, of which 16,884 died, 10,061 were slaughtered, 2,420 recovered, and 5,118 remained under treatment.

That the inaction of the Government in this matter is reprehensible, may also be inferred from the petition they received the other day from the Royal Agricultural Society, a body which represents pretty fully the agricultural interests of the country. The society begs that the Government will prohibit all transit of cattle, and put a stop to all fairs and markets until the disease is eradicated. If this is to be done at all, "twere well it were done quickly;" for while the authorities are disputing and deliberating, the plague is spreading, and in a short time there will be hardly a district in the land free from it, and any quarantine measures will then be useless. If this is allowed to go on, we may expect the Rinder-Pest to take up its abode with us for some ten or twelve years at least, as it did on the last occasion of its visit, about 120 years ago.

All the minor measures adopted at the suggestion of the Government have utterly failed, as the disease is now spreading more rapidly than ever. The owners of diseased animals are required to give immediate notice to the Government Inspector, and such animals are at once isolated or slaughtered. Most elaborate directions have also been issued, by order of the Privy Council, for disinfecting places supposed to be contaminated with the poison, including the use of incredible quantities of chloride of lime, burning or burying the carcasses of animals which have died of the disorder, taking up and burying the materials forming the flooring of their sheds, and disin-

fecting the walls. These directions are so complicated, and involve so much labor and expense, that it seems impossible they can be generally carried out; and although it cannot be doubted that filth and neglect of sanitary precautions favor the development of this as of every other fever, yet that the utmost attention to these measures will not insure protection, is evident from the fact, that cattle under the best sanitary conditions, including those belonging to Earl Granville and Miss Burdett Coutts, have suffered as severely as the rest.

All plans of treatment hitherto tried have been unsuccessful, though of course many specifics have been vaunted as certain cures, and letters have appeared in the daily papers detailing the wonderful effects of some nostrum administered by this or that cow-doctor, who has cured every case submitted to his treatment, while all the rest have died. A short time ago the homœopaths expressed themselves anxious to have an opportunity of displaying their prowess in the cure of the plague, but on an offer being made to them to experiment openly on a number of fairly selected cattle at the Veterinary College, they appeared to be very much disgusted, having apparently hoped for a refusal, in order that they might make their favorite complaint of unfair treatment from the profession. So they have refused the offer made to them, and intend, it appears, to experiment on cattle chosen by themselves. After the experience we have had of homœopathic statistics, we shall know how much confidence to place in any statements they may choose to bring forward as the results of experiments performed out of reach of criticism.

Want of space prevents me from giving in this letter any details of the symptoms and pathology of the disease, but I cannot forbear referring to an economical question suggested by its recent ravages. As I have said, it was imported by foreign cattle; and if we continue to import live stock from the continent—and this we are likely to do to a greater extent than ever—we may expect this unwelcome visitor to appear among us again and again, if not to become a permanent resident. Is there no way of meeting this difficulty? It seems to me that there is a very obvious remedy, namely, that of importing preserved meat instead of live stock. An attempt was made last Winter to supply us with South American "jerked beef," but this failed on account of the quality of the meat being bad—so bad, indeed, as in some cases to be seized and condemned as unfit for sale.

But the preservation of meat, in a perfectly good and fresh state, is known to be quite a feasible operation, since a large quantity of meat so preserved is constantly supplied to our shipping; and it does seem remarkable that no one has yet been enterprising enough to attempt to supply the English market with preserved meat obtained from those parts of the American continent where cattle are so plentiful. Such meat, if good, and sold, as it might be, at a rate much lower than the present price of fresh meat, would soon be very largely in demand here; and whoever would carry out such an enterprise, would not only be well repaid commercially, but would be conferring a great boon on the poorer classes of our large cities.

The case of Dr. Robert Hunter (M. D. of New York) has lately excited a good deal of interest, and by its bearing upon the danger of inducing anæsthesia without the presence of a third person, is of importance to the profession. Although Dr. Hunter is not legally qualified to practice in England, and in order to bring his name before the public has used means which are here considered highly derogatory to the dignity of the profession, still the justice of his acquittal has been acknowledged with pleasure by all. The following are the leading points of the case:

Mrs. Merrick, the wife of a tobacconist, charges Dr. Hunter with criminal assault. She had been his patient for some time, and was in the last stage of phthisis. On the 14th of October she visited him for consultation. A part of the treatment appears to have consisted in inhalation of oxygen; but on this occasion she states that something more than usual was put into the inhaler, after which she became stupefied and powerless, but not unconscious, and that while she was in this condition he committed the offence. She, however, uttered no cries, nor did she acquaint any person with the circumstance at the time, although she visited a friend immediately after the alleged occurrence; and on her way home she called again at the doctor's for some medicine, though this time without entering. She even sent her mother and her husband on subsequent occasions for more medicine, and wrote a letter to Dr. Hunter also asking for medicine, as if nothing had happened. On the 2d November (more than a fortnight after), after receiving the sacrament, and being in a very prostrated condition, she communicated the circumstance to her husband, who at once proceeded to horsewhip the physician. The

reputation of the husband, however, prejudiced the case against her—and this, taken in conjunction with the fact of her having neglected to make the charge at once, as well as the absence of direct confirmation, justly influenced the decision of the jury in favor of the accused, and obtained a verdict of not guilty.

The chief feature in the case, and that not a new one, is, that the charge is brought of assault, while under the influence of an anæsthetic. By no means rare are the instances of similar accusations; which, though generally proved to have foundation only in an hysterical condition or a design of extortion, have been the cause of great annoyance and irreparable injury to the victims. A medical man is ever liable to charges of this nature: and when such serious results may so readily accrue, it becomes a question worthy of consideration whether it would not be advisable to adopt Dr. Marion Sims's plan, of insisting on the presence of a third person in all cases of vaginal and similar examinations. Certainly, when anæsthesia is to be produced with the object of examining or of performing even the most minor operation, it would be highly reprehensible to attempt it without assistance, both for the sake of the patient and the convenience of the operator: and even where it is to be induced for the relief of pain, it would be far more judicious to take every possible precaution to obviate the risk of becoming a prey to extortion or hysterical fancy.

I had intended to have narrated some facts of importance in connection with the recent slight outbreak of cholera in this country, but I fear I have already exceeded the space allotted me, and therefore must postpone my remarks, on this subject, till next month.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

- I. *Chloroform. Its Action and Administration.* By A. E. SANSOM, M. D., late Physician and Physician Accoucheur's Assistant to King's College Hospital.

The thanks of the profession are due Dr. Sansom for this brief and clear correction of our convictions relative to this important anæsthetic agent, and for the valuable additions made to our knowledge in

regard to it. The brevity displayed is commendable only in that much information is imparted in very few words. We could wish the doctor had written more, though nothing additional is necessary to a thorough understanding of all which has been written. It is evidently the result of laborious and careful investigation. The recorded experience of the profession has been carefully gathered together, and a bold and logical mind has deduced, therefrom, inferences that must commend themselves to all searchers after truth. In his mind "thought has wedded fact," and this, their offspring, is "worthy of the two."

The first chapter is devoted to "The Discovery of Chloroform." The too generally received idea, that great discoveries are usually the result of accident or blind chance, occurring suddenly and unexpectedly, is, in a few brief sentences, disproved. "The law of gravitation was taught, not by the fall of an apple, but by facts distributed through long ages;" so the production of perfect anæsthesia was approached step by step. The ancients sought to effect it, resorting to many expedients therefor. Thus "Helen tempers with drugs the draught she offers to Menelaus,"

"Charmed with that virtuous draught, the exalted mind
All sense of woe delivers to the wind."

Indian hemp, white poppies, opium, the stems and flowers of euphorbia and saffron, and many other agents, are shown to have been used with this object, and with approximate success; for, "though they did not annul the faculty of sensation, they deadened it." The "ancient Scythians" were accustomed to "inhale narcotic vapors" for the same purpose.

As early as the sixteenth century, attention was called to a "soporific medicine," by Porta of Naples, which Dr. Snow thought "might have been sulphuric ether." It was not until "an impetus was given to the study of the gases," by Sir Humphrey Davy, that much progress was made. In 1846 "an individual, Frost, had a tooth extracted, absolutely without pain," under the influence of sulphuric ether.

"Thus," says the author, "after long incubation, one of the greatest benefits man ever received, saw the light." Numerous experiments were made, both in Europe and America, with various gases, through a period of several years, which were attended with greater or less success, until in 1847 Dr. Simpson "determined on trying a hitherto discarded heavy fluid, chloroform." After first administering it to himself, he used it in operating on the fore-arm of a "highland boy," from which "a diseased portion of bone was removed, absolutely without pain."

The second chapter is devoted to "The Influence of the Discovery." Chloroform came rapidly into use in the practice of surgery; but, several deaths occurring in the first three or four months of its employment, some apprehension was excited, which more extended experience tended, in a great measure, to dissipate. On comparing the number of deaths with the entire number of cases in which it

was administered, Dr. John Chapman found they did not exceed one in 1600. In the Crimean war, the French surgeons administered it in 30,000 cases, without a single accident. In the English hospitals, one death resulted from its use. The number of patients to whom it was there given is not known. It was "employed in midwifery practice, in London alone," 40,000 times, unattended by a fatal result in one instance. We may fairly assume, that some of the deaths attributed to it were due to other causes. Dr. Simpson relates a case, in which "a boy was to be cut for stone." Just as the preliminaries were arranged the boy died, no chloroform having been inhaled. Had it been administered, the death would have been attributed to its influence. Several other cases, of a like character, are mentioned by our author, and it is by no means improbable, that some of the deaths, supposed to have resulted from its use, were due, not to chloroform, but to causes similar to those which occasioned death in the case specified.

It has been feared that the ultimate result of operations was unhappily influenced by the use of anæsthetics. This, Dr. Sansom furnishes tabular statements to disprove, showing that the percentage of deaths was at least as great, prior to their use, as after. The powerful influence they exert, in removing, or rather preventing the ill effects of shock, is shown in Bernard's experiments, quoted by the author. Bernard "found that if animals were etherized, their medulla oblongata could be *destroyed*, without causing death; but if unetherized, a mere pricking of the medulla would induce instant death."

This branch of the subject is concluded, with the statement "that by the immense preponderance of its influence for good, it has been a direct *conservator* of human life."

"The Chemistry of Chloroform" next claims his attention. This is noticed, simply to indicate some of the "ready tests" for the detection of dangerous impurities. These impurities are as follows:

I. The compounds of methyl, whose presence is detected by the property they possess of turning strong sulphuric acid black, when it is mixed with chloroform containing them.

II. The "chlorine products of decomposition," which "constitute its gravest impurity." This decomposition is occasioned by "time, air and light; the last most potently."

The suspected chloroform should first be shaken, with a little distilled water, to which a solution of nitrate of silver is then added. "The white precipitate of chloride of silver indicates *any* of these impurities." It would perhaps be well to submit all chloroform to these simple tests, before using it.

The "Effects of the Inhalation of Chloroform" are placed clearly and vividly before us. The author deprecates its rapid administration, and strenuously insists on its free dilution with atmospheric air, three and a half per cent. of chloroform being a sufficient degree of concentration, and four minutes the shortest time, in which to produce its effects. Thus administered, it seldom occasions unpleasant symptoms, and "after recovery from its primary, there is no perma-

ment effect, either in animals or in man: the influence passes off with the sleep it engenders."

"The Physiological Action of Chloroform and its Allies," occupies a long and exceedingly interesting chapter, to which justice could only be done by inserting it entire.

A "cursory examination" of "its allies" first engages his attention, and serves to convince us that the list is longer and greatly more important than is commonly supposed. We have not space to consider them at length. They possess the property in common of abrogating sensibility. "Chloroform and ether alone," says the author, "produce complete muscular relaxation: in the others, this is only obtained at the confines of death." "We have no need to speak of chloroform as if, for these things" (destroying sensibility to pain, and for the general treatment of diseased conditions), "it were the only agent placed in our hands. Its allies hold themselves up for our consideration, a too much neglected tribe."

The opinion of Dr. Anstie, that the apparent stimulation of alcohol is due to the liberation of fancy, by the impairment of the strength of the will, is combatted. On this subject, he says, "Small doses of alcohol do not suspend nervous action. It is absurd to suppose that in the earliest stage, fancy is set free, because reason is restrained. There is an increase of all the powers; the circulation is accelerated; the sympathetic is not less active, but more active; motion and sensation are exaggerated."

The idea that chloroform possesses an elective affinity for the brain, on which it is supposed to act directly, is contested, with forcible brevity. MM. Lallemand, Perrin and Duray, advocates of the "elective" theory, rest their argument principally on the fact that, after death, a larger amount of chloroform is found in the brain and spinal cord than elsewhere, which, in their opinion, strongly tends to establish their theory.

Dr. Sansom, somewhat pertinently, asks, whether the liver, in which the next largest quantity is found, also possesses an "elective affinity," and refers to the experiments of MM. Faure and Gosselin, who exposed the brain of a dog, and poured chloroform directly on it, without producing "diminution of sensibility." The brain was then divided and chloroform applied: still there was no symptom of narcotism. M. Faure "removed portions of the brain of a narcotized animal: recovery from the somnolence occurred, as in ordinary cases. M. Gosselin injected chloroform into the carotids and failed to produce anæsthesia."

"These experiments tended to show that chloroform, applied to, or circulating in the brain, merely as chloroform, failed to produce anæsthesia."

Dr. Sansom contends that chloroform can only exert its anæsthetic influence through the blood, and that its effect on the brain is entirely secondary, due, not to a positive action, but to the suspension or perversion of a prior influence, viz: the failure of the ordinary supply of duly oxygenated blood. He says a due "supply of oxygen

is a necessity for perfect life; no vital change can go on without it."

"It reacts with every tissue, developing electric and other correlated forces, obedient to and yet producing the unknown vital force. Perfect venous blood, with perfect arterial, produces electrical phenomena, evident and demonstrable. The sum of all these changes is life, with its perfect sensation, perfect volition, and perfect consciousness. * * * Anything which interferes with these processes, either by preventing the supply of oxygen or by so altering the blood that, though the oxygen be present, it cannot take it up, paralyzes the functions of life."

Another chapter is devoted to the establishment of his position, that "Chloroform and Anæsthetic Agents act upon the Blood and Circulation, and their Modus Operandi."

Ether, when mingled with blood, prevents oxydation, liberates the hæmatin, by dissolving its corpuscles, and changes its color to a dark purple.

Chloroform exerts the same influence on the blood corpuscles, in a less degree, and "gives rise to a coloring matter of a vermilion tint, held in suspension." It liberates and chrysalizes the hæmatin. When 1,000 parts of atmospheric air are agitated with pure blood, it gives up 130 of the 200 parts of oxygen which it contains, and has added to its normal proportion of 2 parts of carbonic acid, 138 obtained from the blood. If "the blood, instead of being pure, be mingled with chloroform, morphia, or even alcohol," it receives from 90 to 110 parts less oxygen than before, and loses 140 parts less carbonic acid. These experiments certainly tend strongly to support his theory.

Notwithstanding the fact that Dr. Jackson, in a post-mortem examination, found formic acid and free chlorine, but no unchanged chloroform, Dr. Sansom says, "in most instances the chloroform can be recovered unchanged." Thus, then, it is shown that anæsthetic agents impair the power of the blood to absorb oxygen or excrete carbonic acid, and, by their influence on the "form and integrity of the corpuscles," interfere with the "nutrition of muscle and nerve."

The author sums up a number of interesting experiments on the blood, in these words: "The effect, therefore, of these agents upon the blood is solution—destruction. At first there is a change induced upon the cell itself and upon the nucleus (in the case of a frog's blood). The globulin of the blood corpuscles is acted on as it were by a caustic. Finally, the whole corpuscle is destroyed and its coloring matter set free."

"From the foregoing facts and other considerations," the author concludes that "anæsthetics are agents which, when absorbed into the circulation, exert an influence on the blood." "They are shown to have the power of altering its physical character and its physical properties." "By an action upon its constituent (proteinous) elements, they tend to alter (and by a profounder action destroy) its organic molecules. Its physical perfection being interfered with, its function is held in abeyance; the changes which contribute to perfect

life are retarded. Narcosis ensues, and is due, not to the influence of circulating poison, but to the influence of an altered blood."

In the first stage of anæsthesia, the arteries are dilated and the blood flows with increased rapidity. Later, the arteries become contracted, "the blood retaining its original force." Next in order is observed sluggishness of the flow of blood in the capillaries: "and lastly, there is dilatation of the artery and increased sluggishness in the capillary flow—then stasis." "The essential concomitant, therefore, of a state of anæsthesia is sluggishness of the circulation in the ultimate capillaries, but withal there is a deficiency in the supply of arterial blood."

Observation of an exposed brain, by Dr. Durham, has shown that, under the influence of chloroform, as in ordinary sleep, the brain is "comparatively anæmic," and that, when "its influence began to subside," the brain became "florid and injected." In addition to these facts, it is shown that the sensibility of the lung tissue is destroyed by the vapor, and the bronchial ramifications distended with mucus, the power of expectoration being "in abeyance." "The breathing is quieted, but the *rate* of respiration is scarcely altered, unless the narcotism be pushed to coma." "On the organic conditions of life," little or no influence is exerted.

"The Danger of Chloroform and the Circumstances which modify it," are briefly and clearly stated. Individual experience, as to the proper manner of administration, is held in very low estimation. Physicians are urged to base their conclusions on the aggregated experience of the profession, and not on their own, necessarily limited, observation. He says: "A person will say, 'I have given chloroform in such and such a way two or three thousand times, and have never had a fatal mishap—ergo, mine is the right method of administration.'" The answer is: "If you had administered it ten or twenty thousand times, and had then met with a case of death, you would have but received your just proportion, according to recorded cases."

The greatest danger is found to be, not so much in the quantity inhaled, as in the rapidity of the inhalation and the degree of concentration. When care is taken to provide sufficient dilution, with atmospheric air, and its effect is sought to be gradually induced, there is comparatively little danger in using this agent. "Self-administration of chloroform" is spoken of, in the following emphatic manner: "This action is on a par with that of one who swallows a draught of a solution of prussic acid, hoping it will not kill him."

"Death is proportionately far more frequent among males than females. The proportion given by Snow's recorded cases is 3 males to 2 females; by Scoutteten's, 2 to 1; by Kid's, 4 to 1; by my own, 2.8 to 1." The robust, strong man is in greater danger from its use than the delicate and enfeebled. Children are almost exempt from danger.

These facts are thus explained by the author: "Sudden shocks are the most prone to snap the links that bind our life together. Nature provides, in disease, a gradual depression of the functions; an accommodation, by degrees, to a less perfect life. An animal, which has been gradually accustomed to breathe an impure atmosphere, will

continue alive, though another healthy one plunged therein will die immediately. Two young Frenchwomen were poisoned by the fumes of a charcoal furnace. One, who was in perfect health, fell senseless and suffocated; the other, who was suffering from typhoid fever, resisted the poisonous influence, and screamed till assistance came. Both were rescued, but the healthy girl suffered paralysis of the left arm for six months afterward."

"The Diseased Conditions which increase the Danger," are delirium tremens; fatty degeneration of the heart; poisoned condition of the blood, as in pyæmia and uræmia, and diseases of the lungs, attended with extensive congestion. "In shock," says the author, "to the nervous system, as in the first influence of severe accidents, chloroform should be withheld." This rule, with all deference, we think much too general. Few army surgeons have failed to observe patients recover from shock under the stimulating administration of chloroform, in cases where extensively lacerated and contused wounds were attended, as is not infrequently the case, with unimpaired sensibility of the parts, at least in any appreciable degree, and where every motion of the patient was a shock of little less severity to that originally received.

Valvular disease of the heart constitutes no objection to the administration of chloroform. Dr. Sansom has "given chloroform over and over again to patients affected with incompetency of the valves of the heart," and has "found them very good subjects indeed for its influence." The danger is with "those in whom there is incompetence of the heart's fibre." Rules are given for its diagnosis.

The chapter on "The Danger of Incautious Administration of Chloroform," as treated by Dr. Sansom, is of but little practical importance to those not in city practice, as he urges the necessity of employing some apparatus, by which a definite dilution with atmospheric air may be secured. Mechanical appliances for such a purpose, however desirable, can only come into use in large cities, and among those members of the profession who have frequent occasion to use them.

He thus sums up this chapter: "I recognize two principles for attaining the maximum of safety, in chloroform administration:

"I. The continuous inhalation of an atmosphere of known strength; an atmosphere of about three and a half per cent. We may call this the principle of definite dilution.

"II. The administration of an extremely dilute atmosphere at first, and the progressive increase in the strength, never over-passing five per cent. We may call this the principle of tolerance."

A chapter is occupied with the description of the "Signs of Danger under the Influence of Chloroform." It presents nothing new, though they are well described.

The "vexed question," of the "Mode of Death from Chloroform," is next treated. This chapter is forcibly written, and is as conclusive as anything else we have seen on the subject. It will not admit of condensation, and we content ourselves with a simple statement of conclusions, without entering into explanations.

"In man, death occurs by a more complex mode, modified by

general conditions of system; by emotional influences, by methods by which chloroform is administered."

"Death in the human subject may take place by three modes: I. By syncope. II. By asphyxia. III. By necræmia.

"Resuscitation in Apparent Death from Chloroform," is treated at some length, and several astonishing cases of recovery, after all signs of vitality had disappeared *for at least a half hour*, are related.

Artificial respiration; the application of warmth to the body, and "Faradization of the phrenic nerves, whereby artificial respiration is produced, by the alternate relaxation and contraction of the diaphragm," are the principal means to be employed.

Simple stimuli are, in the author's opinion, "valueless;" "for," says he, "of what use is a stimulus to the heart, which may be excited to action for a few minutes, when the condition remains unchanged, the noxious element uneliminated." There could be no objection to its being used, conjointly with efforts at elimination, were it not, that, in order to administer it, these efforts must be temporarily suspended.

"Such measures as dashing cold water on the patient and applying ammonia to the nostrils, can hardly be expected to have any effect on a patient who is suffering from an overdose of chloroform, for they would have no effect whatever on one who has inhaled it, in the usual manner, and is merely ready for a surgical operation, but in no danger." "Friction is also an important auxiliary. It should be so employed, as to force the blood from the extremities toward the heart."

Attention is called to the importance of pulling the tongue forward, in all efforts to induce respiration.

"Of The Value of Chloroform in Obstetric Practice," Dr. Sansom says, "there cannot be any doubt. Opinions may vary, as to the signs which call for its employment, but there can be no disguising the fact, that it has proved an immense boon, not only in relieving pain, but even as regards the prolongation of life."

"Observations show that in this department, midwifery, the immunity is special and almost complete."

On this subject, and that of "Chloroform in Practical Medicine," Dr. Sansom has written much that is both interesting and valuable: the space allotted this article, however, will not permit further reference to these subjects.

We cordially commend this little volume to the members of the profession, believing that by far the greater part of its contents is "worthy of all acceptance."

T. L. L.

II. *The Principles and Practice of Obstetrics.* By GUNNING S. BEDFORD, M. D., Professor of Obstetrics, the Diseases of Women and Children and Clinical Obstetrics in the University of New York. Third Edition. New York. W. Wood & Co. 1866.

In common with most of the physicians of this country, we have

long been familiar with this work. It is well known also to the students of this science in Europe, and its merits are fully as well appreciated there, as in America. It has been republished in France and Germany, and is the text-book used in many of the best schools of medicine. The simplicity and clearness of diction, with the generally unexceptionable phraseology displayed, are specially worthy of praise; for few writers, in America, have had the good taste to eschew that bombast, transcendentalism and pedantry, in technology, that are justly subjecting our medical literature to unsparing condemnation and unavoidable ridicule. The style of this work is good, and the general arrangement acceptable. Attention to details, that are overlooked by many writers, is prominent throughout, and there is abundant evidence of close and consecutive research. It is to be regretted, that in a work so generally admirable and satisfactory, there is not a different and more approved lesson inculcated, in regard to the use of instruments. While the deceptions and base subterfuges adopted by charlatans and extremists, for displaying their dexterity in instrumental manipulation, cannot be too unsparingly condemned, we cannot approve of that opposite course which would subject both mother and child to grave danger, rather than violate those conventional and traditional rules that obstetric science is rapidly modifying and discarding. We believe that the friends and admirers of Dr. Bedford would be gratified to find his teachings, in this single respect, conform (in his next edition) to the views inculcated by the majority of modern writers, who, though in no respect his superiors, have yet practically admitted truths, unquestionably established by accumulated facts and unimpeachable testimony.

III. *Obscure Diseases of the Brain and Mind.* By FORBES WINSLOW, M. D., D. C. L., Oxon, etc. Second American Edition. Henry C. Lea. Philadelphia. 1866.

This work is well known to all who have taken any interest in the study of this abstruse and important subject. As an authority, in medico-legal medicine, Dr. Winslow has long occupied a deservedly distinguished position. It is rare to find any one capable, not only of logically discussing questions proverbially obscured by the subtlety of the jurist and the casuistry of the metaphysician, but of bringing to such a discussion the pleasing graces of rhetoric and the chaster ornaments of polite literature. The physician and advocate will each read this work with interest and instruction, while the general reader will find in it a pleasing antidote for that poison which, diffused throughout most of the mass of modern literature, is rapidly destroying our mental vigor and moral integrity.

NOTE.—We will endeavor to notice, as soon as practicable, the many books received.

MISCELLANEOUS.

Identification of the Dead.—A case of singular interest has recently occurred at Alta, California, in which the process of Dr. Richardson for restoring the features of the dead body that has undergone putrefaction, described in the *Lancet* two years ago, was applied with the most satisfactory results. It appears that on Tuesday evening, the 14th of March, of the last year, a dead body was discovered buried a little way under ground. The earth over the body was only six inches deep at the head, and twenty inches at the feet of the corpse; and as the ground had been disturbed by dogs or boys passing over it, portions of the dress of the dead were exposed. A person named McGlone first made the discovery and communicated it to the police, who shortly afterwards disinterred and conveyed to the dead-house a dead man, who, from the marks of injury inflicted on him, had evidently been murdered. The skull was crushed, and the rope by which he had been dragged to the grave was left around the body. At this time the process of decomposition was so far advanced that identification was impossible. In the difficulty that arose, Dr. J. L. Henry suggested to the coroner that he should use the method of restoration which had been previously carried out by Dr. Richardson. The suggestion was assented to. The body was placed in water in the water-tight shell; twenty pounds of common salt and one pound of hydrochloric acid were added to the water, and the immersion was sustained three hours. The body was then removed, the face was washed with simple water, and afterwards with chlorine water, and finally a current of chlorine gas was passed freely over his face. The restoration of the features was thus rendered so perfect that the body was positively identified as that of Charles T. Hill, a man twenty-seven years of age, and a native of the State of New York.—*Lancet*.

Treatment of Coryza.—M. Luc, an Assistant Surgeon in the French army, recommends the inhalation of tincture of iodine in nasal catarrh. "I inhaled tincture of iodine," says he, "from a phial for one minute at a time, at intervals of about three minutes; the heat of my hand was sufficient to promote the evaporation of the iodine; the headache yielded first, sneezing became less frequent, the secretion less copious, and although the inhalation caused a burning sensation in the throat, I was entirely cured at six o'clock P. M., of a cold which from nine A. M. to three P. M. had been sufficiently violent to compel me to use four pocket handkerchiefs."—*Dublin Med. Press*.

M. Luc claims to have had equally good results in several other cases.

L.

How to Preserve Vaccines.—Dr. D. Prince, of Jacksonville, Illinois, recommends, in the Chicago Medical Journal, the following method:

"Fill a one or two-ounce wide-mouthed bottle half full of freshly exsiccated alum, upon which place the vaccine scab, enveloped in paper; cork and seal with good sealing-wax. The exsiccated alum has a very strong affinity for water, and by this means the scab will be kept dry, the indispensable requisite for its preservation."

The Muscular Sense.—Dr. Hughes Bennet, Professor of Edinburgh University, lately read a paper before the British Association of Science, wherein he announced that the tendency of modern physiology was to ascribe to man a sixth sense. If there be placed before a man two small tubes, the one of lead and the other of wood, both gilded over to look exactly alike, and both of the same temperature, not one of the five senses could tell the man which is lead and which is wood. He could tell this only by lifting them, and this sense of weight was likely to be recognized as a sixth sense.—*Phil. Rept.*

Excision of Enlarged Spleen.—For the first time in England, and for the third time only in the history of surgery, an enlarged spleen has been excised from a living human being. Mr. Spencer Wells performed the operation in Marylebone, last Monday, and showed the spleen at the Pathological Society on Tuesday. It weighed six pounds, four ounces. The patient was a married woman, thirty-four years of age, who was dying from the pressure caused by the enlarged spleen, and, as far as Dr. Jenner and Mr. Wells could discover, was otherwise likely to live. We hear that forty-eight hours after the operation, the patient was "as well as could be expected." *Medical Times and Gazette.*

Quack Vegetable Pills.—Professor Parrish, several years ago, had a student who selected for his thesis the analysis of a quack pill, then in vogue as a vegetable medicine. Some boxes were obtained at the counter of the proprietor to prevent mistakes, and on subjecting them to distillation with iron filings, the Indian vegetable came over in the form of *globules of mercury!*—(Minutes of the Amer. Pharmac. Association.)—*American Journal of Pharmacy.*

Magnesium Light.—A literary gentleman, who has been for some time a secretary or amanuensis of Mr. Carlyle, the newly elected Rector of the University of Edinburgh, has just invented a lamp for burning magnesium, of a character so simple and effective that all the mechanicians are astonished. It is one of those happy ideas that seem inspired, and at the same time make everybody wonder that they had not thought of them. The magnesium is reduced to a fine powder; then mixed with sand, it runs through a tube as from an hour-glass, and when lighted by a match, a brilliant and steady flame is produced, until the reservoir is exhausted. Thus all the difficulties

of using this light for streets, public buildings, light-houses, and so on, are overcome.—*Phila. Reporter.*

Expansion of Ice.—Rev. Frederic Gardiner gives, in the last number of *Silliman's Journal of Science*, some curious experiments of his, made on the ice of the Kennebec river, in Maine. By inserting a line of stakes in the ice across the river in the early part of February, he found, in the middle of March, that there had been an expansion of the ice of over twelve feet in a breadth of five hundred feet. As during this time the temperature of the water was nearly equal, the expansion must have been due to the sun's rays, which was proved by the fact that there was the least expansion on the Eastern side, where the ice was partially shielded from the sun by a high bank.

Healthfulness of Iron-Clads.—Some interesting and extraordinary facts and statistics, covering the comparative healthfulness of iron-clads and wooden vessels, are given in the report of the Chief of the Bureau of Medicine and Surgery. The monitor class of vessels, it is well known, have but a few inches of their hulls above water-line, and in a heavy sea are entirely submerged. It has been doubted whether, under such circumstances, it would be possible long to preserve the health of the men on board, and consequently to maintain the fighting material in a condition for effective service. It is gratifying, therefore, to know that an examination of the sick reports, covering a period of over 30 months, shows that so far from being unhealthy, there was less sickness on board the monitor vessels than on the same number of wooden ships with an equal number of men, and in similarly exposed positions. The exemption from sickness upon the iron-clads in some instances is remarkable. There were on board the Saugus, from Nov. 25, 1864, to April 1, 1865, a period of over four months, but four cases of sickness (including accidental injuries), and of these, two were diseases with which the patients had suffered for years. On the Montauk, for a period of 165 days prior to the 29th of May, 1865, there was but one case of disease on board. Other vessels exhibit equally remarkable results, and the conclusion is reached that no wooden vessels in any squadron throughout the world can show an equal immunity from disease. The facts and tables presented are worthy of careful study.—*Phila. Reporter.*

Dr. Schwartz, of Breslau (Dingler's Polytechnisches Journal), has invented a method of rendering service-pipes of lead free from the usual dangers. It is by converting the surface of the interior of the pipes into sulphuret of lead, which is well known as the most insoluble of all the compounds of that metal. This fact has its corroboration in nature, in the case of the waters from the Galena mines, which are free from lead. Dr. Schwartz states, also, that distilled water, which had remained in contact with a pipe thus coated, was as pure as though it had run through a tube of glass.

The manner of coating the leaden pipes is very simple: it being

only necessary to fill the pipe with a concentrated solution of sulphuret of potassium or sulphuret of sodium, of 212 deg. F., and let it remain for ten to fifteen minutes.

Progress of Medical Science.—These tables will be welcomed by every true lover of the Science of Medicine, and will be gladly cited wherever folly or skepticism play the part of the traducer.

Mortality in England.

DISEASES.	In 1879.	In 1859.
Small-pox, - - - - -	857	42
Fevers, - - - - -	749	59
Childbirth, - - - - -	86	17
Dysentery, - - - - -	753	8
Scurvy and Purpura, - - - - -	142	2
Syphilis, - - - - -	21	12
Anasarca, - - - - -	298	26
Phthisis, - - - - -	1079	611
Diseases of Digestion, - - - - -	146	95
Convulsions of Dentition, - - - - -	1175	186
	4986	1015

Average Duration of Life.

COUNTRIES.	In 1879.	In 1859.
England, - - - - -	36	42
France, - - - - -	34	40
Germany, - - - - -	31	37
Holland, - - - - -	32	38
Naples, - - - - -	30	36

MEDICAL NEWS.

In the Medical Department of the University of Michigan, there are, during the present session, 450 students. The Faculty consists of ten Professors, and the course of lectures extends over a period of six months. The members of the medical profession, in America, will welcome, with peculiar pleasure, the length of the course adopted by this Institution. It is entirely in opposition to those recent innovations made and being made in other Colleges. To the physicians of America, this question exclusively belongs. The precedents established

by Colleges, and the statements of those gentlemen connected with them, should be rigidly ignored, for, on the broad principle of law, interested testimony and opinion must be excluded in the trial of every case. The great and only tribunal before which this question properly comes, is that constituted by the medical *practitioners* of America, who, if conscious of their power and jealous of the infringements made and being made upon the dignity, efficiency and even respectability of their art, will unsparingly condemn efforts made to abbreviate the course, already culpably short, in the medical Colleges of the country. This subject, however, will be reviewed, at length, in the March issue.

The Atlanta Medical College was reopened in November last. The Faculty has been reorganized, and in addition to many of its former members, we observe the names of those who, if untried as teachers, are recognized as practitioners of matured experience. Drs. John W. Jones, A. Means, J. P. Logan, J. G. Westmoreland, W. F. Westmoreland, Thos. L. Powell, S. H. Stout, Eben Hillyer, D. C. O'Keefe and G. G. Crawford constitute the Faculty.

New Medical Journals.—A new medical Journal (*The Medical Record*) is to be published once in two weeks, in New York. Dr. George F. Shrady is to be the editor. William Wood & Co., the medical book-publishers, are the proprietors. It will have a fine field to cultivate, and, as we understand that it is to be conducted on liberal financial principles, it ought to succeed well.

Dr. Richet has just been appointed to the chair of Surgery, at the School of Medicine of Paris, made vacant by the death of Professor Malgaigne.

Medical Classes in this City.—As was anticipated, both the medical Colleges of this city have larger classes than they had last session, though there are very few students this winter from the South. The University, we learn, has about five hundred, and the Jefferson College about four hundred matriculants.—*Phila. Reporter.*

Martin Bossange.—Many of our readers are doubtless familiar with the name of the firm "Bossange, Fils," of Paris, booksellers and medical book publishers. Martin Bossange was the oldest bookseller in Europe. He died on the 24th of October, having attained within a few months the advanced age of one hundred years. He had the full possession of his faculties almost to the last moment of his life. The present Emperor, Napoleon III., conferred on him, in August last, the order of the Légion d'Honneur, which was promised him by Napoleon I. in 1813, as a reward for his great abilities as a bookseller of the time of the first Empire.—*Phila. Reporter.*

M. Jobert de Lamballe.—It is stated that the distinguished surgeon

of the Hotel Dieu, Paris, and surgeon ordinary to the Emperor Napoleon, M. Jobert de Lamballe, has been unfortunately seized with mental alienation, and has been conveyed to a private mad-house. Hard labor in scientific pursuits has brought about this lamentable occurrence.

Government Hospital Patients —The number of sick and wounded in the Government hospitals throughout the country is less than five thousand. Eight months since there were over one hundred thousand patients.

EDITORIAL.

We embrace the first appropriate opportunity of returning our warmest thanks to the members of the Medical Profession, for the prompt and generous support which has been extended to this Journal.

Before the first number was issued, nearly two hundred gentlemen testified, by subscription, their confidence in the success of the work, and their desire to render to it early assistance.

In the several hundred letters received, there has been, with one exception, the most uniform manifestation of interest and friendship, with a generous expression of confidence and encouragement. A large proportion of these writers are now subscribers, while the others, if too poor in purse to increase this material aid, are rich in the possession of generous feeling and liberal in the assurances of a welcome sympathy.

The support, so far received, has come from all portions of the country. Professors, old and young, in Medical Colleges, with distinguished Practitioners, have, in addition to aid from the purse, freely and gratuitously tendered the equally valuable contributions of the pen.

We are grateful for these manifestations of confidence; and trusting that the supporters of this Journal will never have cause to regret them, we desire to make this public and formal acknowledgment of the generous reception which has been accorded to this effort in behalf of Medical literature.

It is due to those who have come forward to sustain this Journal, that some information should be given, in regard to its future policy and management.

The fact has long been acknowledged, that the comparative failure of most American Journals, is the result of two causes: the first, is an unwillingness or inability to properly remunerate contributors of original articles, and the second (a necessary consequence of the first), the publication of manuscript offered by obscure, though generous and ambitious writers.

It is the declared policy of this Journal to return ample remuneration, if desired, for all accepted or published manuscript; and it is requested that not only original "Articles" should be sent forward, but also "Reviews," "Letters," "Translations," "Clinical Notes," "Biographies," and all papers relating to Medicine, Surgery, and the Collateral Sciences.

In rejecting contributions sent, the welfare alone of the readers will be the uniform basis of action. Many may be offended or wounded, by the rejection of their offerings, but the broad principle is adopted, that it is necessary to offend these, if offence be the illegitimate result, rather than impose, habitually and systematically, upon the generosity or forbearance of the reader. It is better for one than for one hundred to suffer, if suffering be the effect of such a policy; but it is hoped and supposed, that no one will assume manuscript to be necessarily worthless, because it is rejected; for with a desire to be just to both reader and writer, many errors of judgment must necessarily be made.

There may be merit in articles, which we fail to observe. Examined, by defective or insufficient light, the sparkle even of the diamond is lost.

In the Medical and Surgical Retrospect, there will be presented interesting articles (or analyses of such articles) that were published, during the late war. For this purpose, the necessary Journals have been purchased. When such material is exhausted, this subdivision of the Journal will be discontinued.

The Eclectic Department will become a chief feature of the work; and to make it specially acceptable and valuable, a complete system of "Exchanges," European and American, is now being arranged.

Reports of any clinical material that may hereafter be available in

this City, will be presented. It is specially desired, however, that notes of clinical lectures, delivered at the large hospitals of the country, be transmitted for publication.

There will be in each Number (in the absence of disappointment in the arrangements made), a "Letter" from Paris, London and New York, with an occasional "Letter" from New Orleans, and other points of medical interest.

Reviews, *if they can be obtained*, will be given, with the usual Book Notices of new publications.

The Miscellaneous Department will be made as interesting as practicable, and there will be, briefly stated, the Medical News of the month.

Subjects of current interest will be cursorily examined in the Editorial Department, and, if the members of the profession will furnish the information (and they are earnestly asked to do so), there will be published brief Mortuary Notices of those Physicians whom the sickle of death may remove from the professional field.

Devoted, as this Journal is, exclusively, to the progress and development of Medical Science, nothing of a personal, political or controversial character will be published in its pages.

This is briefly, but definitely, the policy of this Journal. It is presented, that all may know the exact character of the work to which they extend either a literary or pecuniary support. It will be a material compensation, for the labors of the Editorial and general management of the Journal, to know that such a policy commands the respect and approval of the Profession.

Whatever success has so far been attained, or may be hereafter attained, by this Journal, is to be greatly attributed to the zeal and practical energy of Dr. W. S. McChesnéy, the Junior Editor; while the Senior Editor alone is responsible for all errors or evidences of bad management, as to him, with a confidence and generosity most rare, the executive and administrative work of the Journal has been exclusively entrusted.

Audi alteram partem is an inculcation, as necessary in the philosophy

of medicine, as it is in that of law, for the development of justice and the elucidation of truth.

It is in recognition of this important fact, that the article on Cholera, apart from its well-sustained interest and great merit, is presented in this number, for examination and study.

In all that relates to the etiology of this disease, it differs radically from the views advocated in the Editorial of the January number, yet it is hoped, by giving, in regard to Cholera, as with all diseases imperfectly understood, opinions and arguments entitled to respect, that this Journal will contribute towards the discovery of truth and the progress of science.

As there are comparatively few of the profession interested in the subject of ozone, the Essay on this subject, by the Senior Editor of this Journal, will not, unless it is requested, be published. The space necessary for such a purpose will be given to matter of more general interest.

It has been impossible to find room in this Number for the article on "Cerebro-spinal Meningitis." The Chromo-lithograph, exhibiting the pathognomic lesions and appearances of the brain after death by this disease, has been prepared, at a heavy cost, and will be presented in the March issue, with an appropriate article.

We have received the Prospectus of The Atlanta Medical and Surgical Journal, in which it is stated that the first number of the New Series will be published in January. We have entered the Editorial field very recently, but still, long enough to give us a right to congratulate the accomplished Editors of this Journal upon its restoration, and to wish them a long career of usefulness and prosperity. The Journal is edited by Drs. J. G. & W. F. Westmoreland.

New Orleans Medical Journal.

This long known and deservedly popular work is to be re-established as soon as the pecuniary receipts will justify the expenses of publication. Dr. Bennet Dowler is well known to all students of

medicine and general science in America, and to a large corps of admirers in Europe. There are few physicians in America who have not read his contributions to medical literature with pleasure and profit, and all will welcome the republication of a Journal, that has been so long conducted by him with merited success and distinguished ability.

The Savannah Journal of Medicine.

We have received, just as the last sheets of this number were passing through the press, the January issue of the Savannah Journal of Medicine. The delay in the receipt of this Journal has doubtless been due to the imperfect mail facilities, as yet enjoyed, in many of the States of the Gulf. It is a source of pleasure to find, that the old and well-established Journals of the country are again being sent to their respective corps of gratified and appreciative readers.

The Savannah Journal of Medicine is now edited by Juriah Harriss, M. D., J. B. Read, M. D., and J. G. Thomas, M. D., Professors in the Savannah Medical College, and it is published under the "auspices" of the Georgia Medical Society. Under such favourable circumstances, the Journal must enjoy an early success; and that it may attain this speedily, with a subsequent career of prosperity and distinction, is the earnest wish of the many admirers of its accomplished editors.

The Original Communications are as follows: Abstract of an Inaugural Lecture, delivered at the opening of the Savannah Medical College, by W. M. Charters, M. D.; Report of a Case of Elephantiasis, by Juriah Harriss, M. D.; Bromide of Ammonium and Potassium, by J. B. Read, M. D., and Fissure of the Anus, by Juriah Harriss, M. D.

The well-known case of excision of the knee-joint, by Dr. J. M. Read, is reported at length, and the many friends and admirers of this gentleman will be pleased to know, that an operation, so creditable to his Surgical skill, has been brought prominently to the attention of the medical public.

We extend, to these co-laborers, in the field of Medical Journalism, a friendly and cordial greeting, and recommend their work to the support and confidence of the Profession.

NOTICES.

Dr. James Bolton, of this city, desires to inform the members of the profession, that he has a full supply of reliable vaccine virus, which it will afford him pleasure to distribute. To prevent actual loss, to one who thus generously gives, to the public, the benefit of his time and labor in this connection, it is especially requested that each applicant will transmit five cents in currency or postal stamps. The demand for virus is very great, and, without the enclosure specified, there must be material loss, for expenditures in stationery, etc.

It is hoped that the country, seriously threatened as it is, at many points, with epidemic small-pox, will be abundantly supplied.

As, during the late war, many thousands lost their limbs, and it is specially desirable that they should obtain the best substitutes possible, notice is hereby given to all manufacturers of artificial limbs, that a Board of impartial, experienced and prominent Surgeons will be convened in this city, on the 1st of May 1866, for the purpose of examining and testing all models, that may be submitted for inspection. The result of the examination will be generally published for the guidance of all Physicians, and, through them, for the benefit of their patients and friends. Physicians are particularly notified, that this information will be given in time, to all American manufacturers of artificial limbs, and any future statement made by a manufacturer, in defence of his patent, that there was no opportunity given, of competing, in this examination, with all similarly interested, will be unreliable. All models, intended for inspection, will be sent, by express, expenses paid, to E. S. Gaillard, M. D., Richmond, Va.

We take pleasure in calling the attention of the public to the Lithographing and Engraving establishment of Messrs. Ludwig & Keatinge, of this city, who engraved all of the work for this Number. Their terms are as reasonable as those of any firm in America, and they are prepared to execute elaborately any work entrusted to them. From experience, we can, with pleasure, recommend these gentlemen.

American Medical Association.—The Seventeenth Annual Session will be held in the city of Baltimore, on Tuesday, May 1, 1866. The following Committees are expected to report:

- On Prize Essays, Dr. Austin Flint, Sr., New York, Chairman.
- On Quarantine, Dr. Wilson Jewell, Pa., Chairman.
- On So-called Spotted Fever, Dr. Jas. J. Levick, Pa., Chairman.
- On Ligature of the Subclavian Artery, Dr. Willard Parker, N. Y., Chairman.
- On Tracheotomy in Membranous Croup, Dr. Alex. N. Dougherty, N. J., Chairman.
- On Rank of Medical Corps in the Army, Dr. C. S. Tripler, U. S. A., Chairman.
- On Rank of Medical Corps in the Navy, Dr. T. L. Smith, N. Y., Chairman.
- On Medical Literature, Dr. C. A. Lee, N. Y., Chairman.
- On Medical Education, Dr. Samuel D. Gross, Pa., Chairman.
- On American Necrology, Dr. C. C. Cox, Md., Chairman.
- On Patent Rights and Medical Men, Dr. David Prince, Ill., Chairman.
- On Alcohol and its Relations to Man, Dr. Gerard E. Morgan, Md., Chairman.
- On Insanity, Dr. Alfred Hitchcock, Mass., Chairman.
- On Milk Sickness, Dr. Robert Thompson, Ohio, Chairman.
- On the Relation which the Doctrine of the Correlation and Conservation of Forces bears to the Physiological and Pathological Condition of the Human System, Dr. S. L. Loomis, D. C., Chairman.
- On the Progress of Medical Science, Dr. Jerome Candee Smith, N. Y., Chairman.
- On Diphtheria, Dr. H. D. Holton, Vt., Chairman.
- On the Comparative Value of Life in City and Country, Dr. Edw. Jarvis, Mass., Chairman.
- On Drainage and Sewerage of Cities in their Influence on Health, Dr. Wilson Jewell, Pa., Chairman.
- What Effect has Civilization on the Duration of Human Life, Dr. Augustus A. Gould, Mass., Chairman.
- On Disinfectants, Dr. E. M. Hunt, N. J., Chairman.
- On Compulsory Vaccination, Dr. A. Nelson Bell, N. Y., Chairman.
- On Strangulated Hernia, Dr. W. F. Peck, Iowa, Chairman.
- On the Causes and Pathology of Pyæmia, Dr. J. J. Woodward, U. S. A., Chairman.
- On the Use of Plaster of Paris in Surgery, Dr. Jas. L. Little, N. Y., Chairman.
- On the Etiological and Pathological Relations of Epidemic Erysipelas, Spotted Fever, Diphtheria and Scarlatina, Dr. N. S. Davis, Ill., Chairman.
- On Meteorology, Medical Topography and Epidemics, Drs. J. C. Weston, (Me.), P. A. Stackpole, (N. H.), C. L. Allen, (Vt.), A. C. Garrett, (Mass.), C. W. Parsons, (R. I.), B. H. Catlin, (Conn.), E. M. Chapman, (N. Y.), E. M. Hunt, (N. J.), D. Francis Condie, (Pa.), T.

Antisell, (D. C.), O. S. Mahon, (Md.), T. M. Logan, (Cal.), R. C. Hamill, (Ill.), J. W. H. Baker, (Iowa), Abm. Sager, (Mich.), J. W. Russell, (Ohio).

Information is desired as to deaths or other changes in the list of permanent members.

WM. B. ATKINSON,
Permanent Secretary, Phila.

NOTE.—Obituaries will hereafter only be published, at the cost of printing them.

MATRIMONIAL.

MARRIED, in Raleigh, N. C., January 10th, at the residence of the bride's mother, by Rev. Dr. Mason, Dr. B. F. GARDNER to Miss M. IDA PENNINGTON.

OBITUARY.

DIED, in Williamsburg, Va., May 18th, 1862, after an illness of four days, of an affection of the stomach, to which he had been for many years subject, JOHN M. GALT, M. D., son of the late Alexander D. Galt, M. D.

Dr. Galt was Superintendent and Physician of the Eastern Lunatic Asylum at Williamsburg, and he nobly and conscientiously performed the duties devolving upon him. Of him it may be said, as was remarked of his philanthropic father, "that his duty was performed with as scrupulous fidelity, as though 'the Recording Angel of Heaven's Chancery had been ever at his side.'"

His zeal in contributing to the comfort and welfare of those committed to his care, knew no wearying; and knowledge gained by diligent investigation on this Continent and in many languages in Europe, was used by him with perfect success, to reillumine the darkened mind.

This great and good man was well known in this country and in Europe, for his philanthropic life, and classical and literary attainments: Literature is enriched by his learned and elegant writings.

Science mourns an irreparable loss; for, a bright and shining light has left her world forever!

The *alma matres* of this eminent philanthropist and distinguished physician and scholar, were William & Mary College, and the University of Pennsylvania.

To those to whom he was the dearest on earth, from childhood to manhood, he never caused a sigh or tear, and in his own home his presence was as perpetual sunshine; and, like the vanishing of sunlight, is the loss of a spirit so spotless and so bright.

He was much loved on earth, and surely loved by our heavenly Father, for He "loveth a cheerful giver," and his name was a synonyme for disinterested kindness and benevolence; and truly was it said of him, that Virginia had lost one of her brightest jewels, and the poor and needy their kindest benefactor.

His was a name, rich with the generous deeds of generations—a name, on which heavenly philanthropy sheds its imperishable lustre. His life was pure and bright as the flowers he loved, and as the holy influences of nature, in which he took delight; for all nature was to him as an open book, in which he read truths wonderful and beautiful.

A life of devotion to the good of others, has closed on earth; and that soul, that knew no guile, has gone to receive the great reward, promised to all who believe, as he did, in the Saviour for salvation, and faithfully endeavor to walk in His footsteps.

[Published by request.]

BOOKS, JOURNALS, ETC., RECEIVED.

The Principles and Practice of Obstetrics. By GUNNING S. BEDFORD, M. D., etc. New York. W. Wood & Co. 1866. (From the author.)

Lectures on the Diseases of Infancy and Childhood. By CHARLES WEST, M. D., etc. Fourth American Edition. Philadelphia. H. C. Lea. 1866. (From the publishers, through A. H. Christian & Co., Richmond, Va.)

Obscure Diseases of the Brain and Mind. By FORBES WINSLOW, M. D., etc. Philadelphia. H. C. Lea. 1866. (From the publishers.)

Report of the Medical Missionary Society in China—1862, 1863 and 1864.

Report on Epidemic Cholera. New York. Sanford, Harroun & Co. 1866.

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ERRATA.

Vol. 1, No. 1, line 6, For "righ auriculo-ventricular," read "right
auriculo-ventricular."

" " " 17, For "gastrocnemie," read "gastrocnemii."

SPINAL MENINGITIS



where healthy surface exposed by
hemisphere exposed by the arachnoid
ated
& lymph.

THE RICHMOND MEDICAL JOURNAL.

MARCH, 1866.

ART. I.—*Remarks on the Pathology and Treatment of the Oxalic Diathesis.* Read before the late C. S. Association of Army and Navy Surgeons, at Richmond, April 1, 1865, by L. S. JOYNES, M. D., Professor of Physiology, &c., in the Medical College of Virginia, an Honorary Member of the Association.

The subject of the remarks which I am about to submit may possess little interest for military surgeons, and its discussion may seem rather out of place in an association where the casualties of battle and their results are the objects of paramount consideration. I would not have volunteered, therefore, to press it upon the attention of this body; but, as the respected President, at the suggestion, I believe, of a member to whom I had expressed my views on the subject in casual conversation, has called upon me to submit those views to the judgment of the Association, I cannot refuse to respond to the call.

I may remark at the outset, that if urinary disorders do not belong properly to the domain of military surgery, they must at least not unfrequently claim in practice the attention of army surgeons, especially of those who have the care of the sick in hospitals. The soldier is subject to numerous influences which tend more or less actively to produce derangement of the urinary secretion, no less than of other functions. A diet sometimes insufficient in quantity, occasionally unwholesome in quality, seldom sufficiently varied in its composition, and often ill-adapted to the condition of

the digestive organs—habitual exposure to atmospheric vicissitudes, often without adequate protection by clothing—the fatigues of the march and the combat, and the consequent increased waste of the over-worked muscles—the wear and tear of the nervous system, resulting from loss of sleep, from the incessant excitement of an active campaign, or of life in the trenches, from the anxieties attending the enforced separation from home and friends—sometimes mechanical injuries acting directly to impair the integrity, or disturb the functions, of the urinary apparatus: such are some of the influences in question. The natural result of their operation is to produce, in numerous instances, disorders of digestion and assimilation, derangement of those chemical actions which attend the waste and repair of tissue, deficient action of the skin, exhaustion or disturbance of the nervous power; and it would be strange if these functional disorders were not reflected (so to speak) by those abnormal conditions of the urinary secretion, which they tend so directly to develop—apart from any special action which may be exerted by the morbid causes upon the kidneys themselves. I have had some opportunities of learning, during the present war, that the soldier is liable to his full share of urinary disorders; and I cannot but think that if hospital surgeons would give the subject careful attention, this important class of affections would be found more frequent than is generally suspected, and useful indications of treatment might thus be obtained in many obscure and otherwise unexplained derangements of health.

The investigation of urinary disorders, to an extent sufficient for practical purposes, is not difficult, nor in general very troublesome, if the necessary apparatus be at hand; and no great experience is required to render the observer familiar with the more important appearances. Of the diagnosis of the morbid condition of the urine, which I have now to consider, viz.: that characterized by the abnormal presence of oxalate of lime—I do not propose to speak at length, because it is fully treated of in various works; but I think it worth while to remark, that it is a condition which is exceedingly apt to escape notice. While uric acid and the earthy phosphates form distinct and unmistakeable sediments or deposits in the urine after repose, which at once strike the eye as indicating something

abnormal, such is not always nor generally the case with the oxalate of lime. The crystals of which it consists remain diffused through the lower layers of the fluid, invisible to the naked eye, instead of forming a distinct sandy or pulverulent sediment quite at the bottom. Not unfrequently, indeed, there is a whitish sediment of epithelium, which may excite a suspicion of the presence of oxalate of lime; for an excessive exfoliation of this epithelium from the urinary passages is an ordinary attendant of the oxalic diathesis; but the microscope affords the only sure means of detecting the presence of the oxalate. The octahedral crystals in which it usually presents itself are so striking in appearance, that when once seen, they can hardly be mistaken for anything else, though, from their extreme minuteness in some instances, they may possibly be overlooked by a careless observer. It was owing to the general absence of a distinct visible deposit, that the presence of oxalate of lime in the urine in a crystalline form was formerly thought to be extremely rare. That the *mulberry calculus* is composed of it, was well known; its common occurrence as a crystalline sediment, however, was unrecognized. But every one accustomed to the use of the microscope in these investigations must agree with Golding Bird that it is among the most frequent of the morbid conditions of the urinary secretion.

The main purpose which I have in view at present is to enquire whether the *treatment* of the oxalic diathesis generally recommended by authors is in all respects sustained by just views of the pathology of the affection, and whether a medication differing in an important particular from that which is customary may not be more rationally employed, and with better hopes of a successful result. I desire that my remarks on the subject may be received, not so much as the expression of matured opinions fully confirmed by experience, as in the light of suggestions, intended to awaken inquiry and reflection, and to invite that practical test to which all new methods of treatment must be subjected, before the final verdict on their merits is rendered.

The special remedies heretofore employed in the oxalic diathesis, with the view of correcting the morbid condition of the urine, are the mineral acids. Prout proposed the nitric acid—Golding Bird, who did more to extend our acquaintance with the subject than any

other observer, recommended the nitro-hydrochloric acid. The use of these acids seems to have been suggested solely by the consideration that they are *solvents* of oxalate of lime. Nitric acid dissolves it readily; hydrochloric acid more slowly—while it is unaffected by the alkalies. In view of these chemical facts, it may seem presumptuous to propose the *treatment by alkalies* as possibly meriting the preference. Yet that is precisely the object of this paper.

If the paramount object in the treatment of a urinary deposit were to prevent the concretion of the crystals or particles of the deposit in the bladder or the kidneys to form a calculus, there can be no question that the acid treatment would be the most rational in every case where crystals of oxalate of lime make their appearance in the urine. But a much more important and fundamental indication is to *prevent the appearance* of these crystals, by remedying the morbid diathesis on which their presence depends. If that can be accomplished, no solvents of the oxalate will be required; and it is in this view that I venture to call attention to the alkalies as the more rational therapeutic agents. Of the whole number of cases of the oxalic diathesis, experience teaches that those in which the oxalate of lime concretes to form a calculus, form but a small proportion. And even if this result were more frequent than it is, the surest means of preventing it would be to remove those disorders of vital action by which the production and excretion of the foreign compound are occasioned, instead of seeking the means of effecting its solution *after* it is formed. The latter at best can be regarded as but a secondary aim of the treatment.

In order to appreciate the merits of the alkaline treatment, regarding it from a theoretical point of view, it is necessary to consider the pathology of the oxalic diathesis, the rationale of the formation of oxalic acid in the system. However this acid be generated, the appearance of oxalate of lime in the urine is the necessary consequence, for the affinity of oxalic acid for lime is so great that it will abstract it from all its combinations with other acids; and it will always find, whether in the circulation or the urine, a salt of lime (the phosphate) upon which it may exert its decomposing action.

It is important to bear in mind that the presence of oxalic acid in the system, and therefore of oxalate of lime in the urine, is not always an evidence of disease. The oxalic acid may be derived ready formed from certain articles of vegetable food. It is known that the tomato, the rhubarb or pie-plant, and the sorrel, contain soluble salts of oxalic acid, and the ingestion of those articles is naturally followed by the appearance of oxalate of lime in the urine. But apart from the introduction of oxalic acid ready formed, there is no doubt that it may be occasionally formed in the system, in small quantity, without any actual or serious disease, and that a few crystals of the oxalate of lime may thus be detected in the urine of persons to all appearance healthy. Hence some have made light of the oxalic diathesis, and have pretended that the appearance of the crystals in question is a matter of small consequence. This is only true, however, when they occur in small numbers, or when their appearance is transitory. When abundantly and habitually present, they cannot be regarded as of trifling importance. It is then only that their appearance indicates a true morbid diathesis—it is then that we have to dread the formation of the mulberry calculus, whose irregular surface and projecting angles are in themselves suggestive of agony to the patient; and then that we frequently observe a train of dyspeptic and nervous symptoms, and an impairment of vital force, which indicate the action of a serious morbid influence. How far these effects may be due, as has been suggested, to the actual *poisonous* action of the oxalic acid circulating through the system, it would be foreign to my present purpose to enquire.

To account for the morbid generation of oxalic acid in these cases, two leading views have been adopted. One derives it from different vegetable principles contained in our ordinary food—especially sugar and starch, which abounds in our bread and vegetables, and which is converted into sugar by the process of digestion. It is well known that oxalic acid may be produced artificially from sugar, starch, and the kindred principles, by the action of nitric acid, which induces a partial oxidation of these substances. It is thus, indeed, that oxalic acid is manufactured as an article of commerce. If the oxidation were *complete*, (as in combustion,) the

product would be, not oxalic acid, but *carbonic acid*, in which each atom of carbon is united to two of oxygen. But, as the oxidizing agent employed, (nitric acid,) does not furnish enough oxygen to saturate the carbon completely, the oxidation stops at a lower degree, in which each atom of carbon is united to an atom and a half of oxygen, or, more correctly, two atoms of carbon to three of oxygen—such being the constitution of oxalic acid.

In like manner, in the living organism, it is supposed that the saccharine principles of the food are destined to be oxidized and thereby destroyed, except so far as they may be applied to the formation of fat, (and possibly other organic principles.) If the process be normally conducted, the oxidation is complete, and the products are carbonic acid and water—the former of which is eliminated through the lungs—the great object of this oxidation or combustion of saccharine matters being the support of animal heat. But suppose that, owing to a deficient supply of oxygen, or to some wrong action in the system, the oxidizing process should stop short of completeness. It is quite conceivable that, as in the artificial process, oxalic, instead of carbonic acid, might be the product. Once formed, the oxalic acid would seek an outlet, not by the lungs, but by the kidneys, in combination with lime. On this view, then, the formation of oxalic acid in the system is a result of *imperfect oxidation*.

The other view, which is supported by evidence of a more direct and convincing character, regards it as resulting from the same immediate cause, but derives the acid from a very different source. It considers it as a product of the decomposition of *uric acid*, which is a normal constituent of the blood and urine—a normal product of vital action—and, from its pathological relations, a very interesting one, forming, as it does, the most frequent ingredient of urinary calculi and sediments. As uric acid is proved to be one of the products of the natural waste or disintegration of the nitrogenized tissues—one of the forms in which the worn-out matter of those tissues returns to the external world—and likewise proceeds in part from a transformation of the unassimilated elements of the nitrogenized or animal food, so (according to the view under consideration) oxalic acid may be derived from either source. In neither case,

however, is it a *normal* product of the decomposition of uric acid. When the chemico-vital actions are regularly accomplished, no oxalic acid is produced; otherwise oxalate of lime would be a constant ingredient of the urine. But under certain circumstances, from an abnormal course of the chemical changes occurring in the refuse matters of the system, oxalic acid is abundantly generated.

It may appear at first sight strange that this substance, which contains no nitrogen, should be a derivative of uric acid, which abounds in that element. But, that the oxalic acid may originate from this source is shown by the fact that it may be produced from uric acid by an artificial process. When subjected to the action of an oxidizing agent, (peroxide of lead,) uric acid is decomposed, and the products are oxalic acid, urea, and a peculiar compound called allantoin. Urea, which is the leading animal ingredient of the urine, has long been believed by many chemists to take its origin from uric acid—the latter compound being first produced from the effete matter of the system, and then transformed into urea by a process of oxidation. The chemical experiment just referred to lends the most obvious support to this hypothesis—nor is it less significant in reference to the production of oxalic acid from uric acid.

But experiments much more to the point have been performed upon the living system. It has been found that if uric acid, or one of its compounds, be injected into the veins of a living animal, or be administered by the stomach to an animal or a man, it does not pass into the urine unchanged; that is to say, it does not cause the appearance of an excess of uric acid there, but it causes the excretion of a *large excess of urea, and an abundance of crystals of oxalate of lime*. It is clear, therefore, that the uric acid is decomposed to furnish the oxalic acid and urea.

In the normal course of things, when no excess of uric acid has been suddenly introduced from without, the system only containing what is naturally formed within it, and nothing occurs to modify the healthy actions of the organism, urea is still a product of the decomposition of the same substance, *but not oxalic acid*. Then, by a higher degree of oxidation, *carbonic acid* is doubtless produced

in its stead. It is easy to explain theoretically the formation of carbonic acid and urea by the oxidation of uric acid :

1 atom Uric Acid.....	C 10	H 4	N 4	O 6	}	2 atoms Urea.....	C 4	H 8	N 4	O 4
4 atoms Water.....		4		4		6 atoms Carbonic Acid....	6			12
6 atoms Oxygen.....				6						
	10	8	4	16			10	8	4	16

When oxalic, in lieu of carbonic acid is produced, the abnormal result must be attributed to *deficient oxidation*. Thus, in the foregoing scheme, if we suppose only three equivalents of oxygen to be supplied to the uric acid, we shall have the materials for the formation of three atoms of oxalic acid, in place of six of carbonic acid.

The relations thus indicated between oxalic acid as a morbid ingredient of the urine, and uric acid and urea, its natural constituents, are strikingly confirmed by the observation of disease. Golding Bird has distinctly pointed out, that in a large proportion of cases of the oxalic diathesis, the urine exhibits, along with the oxalate of lime, or perhaps alternating with it, a sediment of uric acid, or its compounds ; that the urine is in most cases more acid than in health, as it generally is also in the uric diathesis ; that it almost always contains an excess of urea, sometimes a very great excess, and that, in consequence of such excess, it is often of high specific gravity.

Very recently, two cases exemplifying this assemblage of characters, presented themselves to my own notice. On the same day, two specimens of urine were handed to me for examination, the one from a medical officer attached to one of the hospitals, the other from a member of my class. Both were strongly acid. The specific gravity of one was 1028, of the other 1030—remarkably high figures for the winter season, when the normal average is but 1015. One contained a very copious sediment of a pale fawn color, the other a deposit, somewhat less copious, of a deep rose hue. Both sediments apparently consisted of urate of soda, differently tinted by the coloring matter of the urine, and this *prima facie* opinion was confirmed by microscopic examination, and by the effects of heat. But the microscope revealed, in addition, an abundance of oxalate of lime, which presented itself in the one case in large and distinct

octahedral crystals—in the other, in crystals of the same form, much more numerous, but of extreme minuteness.

The late Professor Frick, of Baltimore, observed that deposits of uric acid and oxalate of lime might even alternate with each other at different hours of the day.

The general result of the considerations into which I have entered touching the origin of oxalic acid in the system is, that whether it be derived from the vegetable food, from the animal food, or from the effete matter of the decaying tissues, its formation must be referred to *imperfect oxidation*—to an incomplete performance of those chemical actions which should reach their complete result in the production of carbonic acid for elimination by the lungs. And the primary, fundamental indication of treatment, therefore, should be to promote, if possible, these oxidizing actions. It would materially aid our fulfilment of this indication to discover *why* it is that the carbon of the system thus escapes, in part, the final term of its oxidation; but on this point our pathology is at fault. Sometimes, indeed, deposits of oxalate of lime are observed in connection with affections of the respiratory organs, such as emphysema of the lungs and chronic bronchitis—in which cases we may suppose that an insufficient amount of oxygen is received by the blood from the atmosphere. But this is not a general fact; in the majority of instances there is no proof of a deficient supply of oxygen, nor any evident reason for it, and it would lead us into the field of speculation to endeavor to find a solution for the problem at issue. This much, however, we learn from observation: that the defective chemical action is attended, in the generality of cases, with marked disorder of the digestive and assimilative functions, and more or less of nervous derangement—though, how far these may be causes, and how far effects, of the morbid generation of oxalic acid, may perhaps be matter of question.

To proceed with the consideration of the remedies most appropriate to this condition: In the first place, I would ask, does not the strongly-marked acidity of the urine at once suggest the employment of *alkalies*? Does it seem natural, or altogether rational, to prescribe the mineral acids where the urine is already *too acid*, just as we prescribe them in the phosphatic diathesis, where it is alkaline or

neutral? May we not suspect that there is some alliance or relation between this undue acidity and the abnormal deposit to be gotten rid of?

Again: is not this first hint derived from the characters of the urine strengthened by the frequent coëxistence or alternation of the oxalic and the uric acid deposits, and by the chemical relations which have been shown to exist between them? The propriety of the alkaline treatment for the latter is indicated by reason and confirmed by experience. Is it irrational to suppose that it may also be adapted to the concomitant or correlative condition?

I have already disposed of the objection that the alkalies exert no solvent action upon the oxalate of lime, while the nitric and hydrochloric acids do, and have remarked that the object of dissolving the abnormal deposit is altogether subordinate to the removal of the functional disorder on which its appearance depends. If the chemico-pathological views which have been expressed be correct, the special therapeutic agents best adapted to attain this end must be such as tend most actively to *promote the oxidation of organic matter in the system*. Now, the chemical properties of the *alkalies* point to them as precisely the agents best fitted for this purpose. Their powers in favoring oxidation are universally recognized by chemists, and this is considered to be one important purpose of the natural alkalinity of the blood.

"It is impossible," says Liebig, "for the chemist not to acknowledge, that the alkaline quality of the blood is one of the first and most important conditions of the organic process of combustion, of the production of animal heat, and of the change of matter in the body. A number of organic compounds acquire, by contact with, or in presence of a free alkali, the power of combining with oxygen, (of burning,) which, alone, they do not at all possess, at the temperature of the air, or at the temperature of the body. The influence of alkalies in this way is most strikingly seen in such substances as are colored, and become decolorized under these circumstances, or in such as are colorless, and become colored as they are destroyed. Carmine, the most durable organic coloring matter known to us, the coloring matter of logwood and Brazil wood, and *the coloring matter of the blood*, dissolve in solution of potash, and may be pre-

served for months unchanged. But as soon as air or oxygen is admitted to these solutions, oxygen is rapidly absorbed, and these coloring matters are destroyed. (Chevreul.)

The colorless solution of pyrogallic acid, or that of gallic acid, when mixed with excess of alkali, become, when oxygen is admitted, dark red, and are destroyed in a few minutes. Even alcohol is oxidized, when it contains free alkali, and is exposed to air at the ordinary temperature, and becomes brown. Milk sugar and grape sugar, in presence of a free alkali, and with the aid of a gentle heat, deprive even metallic oxides of their oxygen.

The alkalies exert a precisely similar action in the blood; they promote and increase the combustibility of the respiratory matters.

This influence of the alkalies is shown in a decisive manner in the effects produced on the salts of organic acid in the circulation. It has long been observed that, after eating juicy fruits, cherries, strawberries, apples, &c., the urine becomes alkaline. All these fruits, as well as the juices of edible roots, tubers, and green vegetables, contain these alkalies in the form of salts of the organic acids; usually as malates, (all kernel fruits, pine apples,) citrates, (stone fruits, currants, potatoes,) tartrates, (grapes). It has been shown by Gilbert Blane and by Wohler, that the pure salts, malates, citrates, tartrates, &c., of the alkalies, when taken internally, behave exactly as the salts in the juices of these fruits and roots. Citrate, tartrate, malate, and oxalate of potash, whether given by the mouth or in enemata, appear in the urine in the form of carbonate of potash.

The acids of these salts, introduced into the blood in the form of neutral or acid salts, are there burned (oxidized) as effectually as in the most perfect apparatus of combustion. The alkaline carbonates which predominate in the urine of herbivorous animals, are derived from the same source—namely, from the salts composed of the alkalies with the organic acids contained in the fodder. In precisely the same way is uric acid destroyed or burnt in the organism in presence of free alkali. * * * The cause of the so greatly increased combustibility of all these bodies is evidently, as is proved by the most obvious considerations, the alkaline quality of the blood." (Familiar Letters on Chemistry, 3d ed., p. 397–99.)

In like manner, Day (Physiological Chemistry, p. 429,) remarks,

with reference to the alkali in the blood, that its "main purpose doubtless is the promotion of the oxidation of the constituents of the blood, oxygen being simultaneously present in that fluid. It is universally known that the tendency of oxygen to combine with certain elements is enormously increased by the presence of alkalies."

One of the most striking illustrations in point is presented by Trommer's test for grape-sugar, or diabetic sugar—in which the presence of a free alkali (potash), with the aid of a gentle heat, increases the affinity of sugar for oxygen to such a degree, that it deprives the protoxide of copper of part of its oxygen, and reduces it to the state of suboxide—an effect which will not take place unless the alkali be present.

The alkalies are considered to exert a similar action in the blood. The rapid consumption and disappearance of saccharine matters in the circulation is thus explained—the alkali which is always present in the blood, determining the oxidation of the sugar into carbonic acid and water. The proposition of Mialhé to administer alkalies in the treatment of diabetes, is based upon the idea that the alkali of the blood is deficient, and that it is for this reason that sugar escapes oxidation in the system, and makes its appearance in the urine. Whether this theory of the disease be correct or not, it is certain that the administration of alkalies is often followed by a marked diminution of the amount of sugar in the urine, which may be best explained by the influence of these agents in promoting oxidation.

It will be observed that Liebig, in the extract above quoted, distinctly recognizes the idea that it is under the influence of the alkali in the blood that the uric acid formed in the system is for the most part oxidized and destroyed. And this suggests a probable benefit resulting from the alkaline treatment in the *uric diathesis*, over and above the mere solution of the sediment. Entirely in accordance with this opinion of Liebig's, it has been proved by careful experiment that liquor potassæ, administered internally, causes a decided increase in the excretion of *urea*, which we have seen to be a product of the oxidation of uric acid.

If the agency of the alkalies be thus decidedly to promote the oxidation of organic matters, as well within as without the living

organism, I submit that we have a full warrant for the fair and thorough trial of this class of remedies in the oxalic diathesis, which I have shown to be essentially a disease of deficient oxidation. Whether we assume that this condition is due to a deficiency of alkali in the blood, to a deficient supply of oxygen, to an excess of matter to be oxidized, or to any other and unknown cause, theory certainly justifies the employment of the alkalies as promoters of oxidation.

It is no valid objection to this proposal, that when oxalic acid is ingested in combination with an alkali, it is not converted by oxidation into carbonic acid, but passes into the urine undecomposed, in combination with lime. The object of administering alkalies in the oxalic diathesis, is not to cause the disappearance of oxalic acid *after* its formation, but to *prevent its formation*, by bringing about the complete oxidation of those matters which only furnish it when their oxidation is imperfect.

I am far from claiming that chemical reasoning, however satisfactory it may appear, is sufficient to establish a new method of treatment, without the test of experiment; and, as already intimated, my chief object in submitting these views is to solicit a trial of the alkaline treatment, by showing that there is rational ground for it. My own opportunities of testing its merits, since I first conceived the idea of employing it, have not been extensive. The first case in which I prescribed an alkali, was one (of no particular gravity) in which I was struck by the high color and the acidity of the urine. Without any special reference to the pathology of the affection, it occurred to me to try what effect the removal of the undue acidity of the fluid might leave upon the deposit. At the next examination, the crystals of oxalate of lime had disappeared. In a few subsequent cases, I have resorted to the same method of treatment; but, as I have preserved no notes of these cases, I can only report in general terms that the results were sufficiently satisfactory to encourage a further trial. It was not until recently, however, that I was led, by reflection on the subject, to the conclusion that the alkaline treatment is distinctly indicated by pathological considerations, and I am very desirous of further opportunities of judging how far the theory will stand the test of practice.

However, in this, as in urinary disorders generally, the administration of special remedies, whether acids or alkalies, constitutes but a part of the treatment. All the derangements of function which attend must be rectified by the appropriate remedies—alteratives, aperients, tonics, &c., as the case may require—otherwise, whatever benefit may be derived from the special remedies intended to modify the condition of the urine, will be transient and illusory. On this point I have nothing to add to the precepts contained in our standard works.

One remark, however, I will venture in relation to *diet*. If the oxalic acid be in a large proportion of cases a derivative of uric acid, it would seem to follow that, when this relation exists, the rule of diet should be the same in the oxalic as in the uric diathesis—that is to say, the proportion of nitrogenized or animal food should be reduced, and in obstinate cases it should be temporarily withheld. Direct experiment has conclusively proved that less uric acid and urea is produced in the system under a vegetable than under an animal diet. It is a fair inference, therefore, that when the presence of oxalate of lime in the urine is connected, as it so often is, with a deposit of uric acid or its compounds, and an excess of urea, the urine being strongly acid, and of high density, the diet should be chiefly or exclusively vegetable, if the morbid diathesis should prove rebellious to treatment under the ordinary mixed diet.

In concluding these remarks, I readily admit the force of the criticism which may be urged, that the *acid* treatment has been heretofore employed with general success, and that we are therefore entitled to regard it as the proper treatment. But to this I may reply, in brief, that the benefit arising from the administration of acids is not always prompt or decided, and may be plausibly explained (perhaps) by the tonic properties of the mineral acids. Their administration is usually accompanied by that of mercurial alteratives, aperients, and other tonics; and if, by a judicious combination or alternation of such remedies, the functions be restored to a healthy condition, the oxalate of lime may be expected to disappear from the urine, without the necessity of supposing that the acids exert any special powers in correcting the morbid diathesis. If this treatment has been found successful, it does not follow that the

substitution of alkalies for acids would not render it more promptly and directly so. This is a question which can only be determined by a careful comparative trial.

ART. II.—*Rupture of the Womb, produced by the administration of Ergot.* By FRANCIS H. MILLIGAN, M. D., Wabashaw, Minnesota.

In the month of June, 1858, I was called by my friend, Dr. J. M. Bowen, to see a woman in child-birth. The Doctor had been called about an hour before he requested my presence. I found the woman to be about thirty-two years of age, strong, muscular, and apparently in good health. She had borne two children before. About a week previous to my visit, her husband, an ignorant, penurious Irishman, called at my office, requesting my services. I informed him of my fees. He demurred, and said he would employ a midwife, which he did, and, as a consequence, lost both wife and child.

Dr. Bowen, being a young and prudent practitioner, as soon as called to the case saw that it was difficult. He informed me, in his note requesting my presence, that he had made a per vaginam examination, and found the head presenting at the superior strait. When his finger touched the head it would recede. I at once suspected the difficulty, when I ascertained by examination that the Doctor was correct with regard to presentation and receding of the head. The woman had ceased to have pain about ten minutes previous to the arrival of the Doctor, at which time she informed me she felt something break. The midwife had been with her for two days. As the pains, as she expressed it, were sluggish, she gave her ergot for at least twenty hours. I told the Doctor my opinion was, that the womb had been ruptured, and from the condition of the pulse, the aspect of the countenance, and other symptoms present, gave an unfavorable prognosis. I suggested delivery by turning, which I did without the slightest difficulty. The child was a male, well formed, weighing ten pounds and a half—to all appearances had

been dead several hours. The mother had experienced some difficulty in her former labors from contraction of the superior strait. The position was the first of the vertex. The scalp had sloughed where the vertex presented at the brim of the pelvis, showing beyond a doubt that exciting the womb to undue contraction caused the rupture of this organ, and the death of both the child and mother, the mother dying about ten minutes after I delivered the placenta.

ART. III.—*Traumatic Injury of the Gluteal Artery, with Profuse and Protracted Secondary Hæmorrhage.* By ALBERT G. WALTER, M. D., Pittsburgh, Pennsylvania.

Mathias Vrolatka, aged fifty-one years, a Polander by birth, of stout frame and full muscular development, of South Pittsburgh, Pa., twenty-three days ago was struck upon his back by a pointed piece of melted glass, the drippings of a glass-house oven, under which he was at work, in a stooping position, clearing the grate of cinders. It weighed about ten pounds, measuring 4 inches in length, with a diameter of $1\frac{1}{2}$ inches at its upper part. The wound thus inflicted by cutting and burning was of considerable depth, and situated about four inches below the crest of the os ilii and three inches from the os sacrum in the region of the right great ischiatic notch. Profuse arterial bleeding was the immediate consequence, between three and four quarts of blood being lost in a few minutes. He was promptly assisted by his fellow-workmen, who carried him home and stuffed the wound with common salt and burnt rags, which had the effect of arresting the bleeding. A homœopathic physician, happening to pass by, was called in, applying strips of adhesive plaster over the dressing, and directing the patient to keep the face position as a preventive of farther hæmorrhage. He visited him daily for a week, removing the plaster occasionally. At the expiration of that time, the wound freely suppurating and the injured part greatly swollen, he was ordered to get up and to resume work, the case not requiring any farther attention. Obeying the directions of his Doctor, he continued to work, though suffering

great pain in the wound and its neighborhood, the discharge of matter still being copious and mixed with blood. At the end of another week, secondary bleeding of an arterial character, profuse and rapid, set in, three pounds of blood again being lost, with a large quantity of coagula accumulating in the bottom of the wound, causing great swelling of the right nates. The patient being promptly removed to bed, the hæmorrhage spontaneously stopped, but returned the next day in less quantity, clots of blood being forced out of the wound, the swelling of the hip at the same time remaining undiminished. The bleeding recurring every day to the amount of a pint or two, with feeble prospect of being arrested by the continued prone position, which the patient was keeping, and by the assiduous attention of the Doctor, who daily syringed some water into the wound, next dressing it with lint and plaster, it was resolved to hold a council of medical men, and profit by their united wisdom. Two more homœopaths meeting in consultation, the result of their deliberation was, that the man should continue in the prone position of his body—that the wound should be daily syringed with water, and after this be stuffed with lint, perchloride of iron in substance being liberally put on the dressing—and that, notwithstanding the drained condition of the system, in consequence of the protracted and profuse bleedings, a most abstemious diet, without any stimulants whatever should be strictly and scrupulously observed. Two homœopaths continued their daily attendance, but their united efforts were fruitless, the hæmorrhage continually returning. Finding, at one of their visits, that no water would enter the cavity of the wound by syringing, it being filled with coagula, they were overjoyed, anticipating a speedy recovery, alleging that the cavity had closed during the previous night so firmly as to prevent any fluid from entering it again. The bleeding, however, continuing with unabated swelling of the hip, the friends of the patient, tired of their unavailing efforts, and alarmed at the prostrate and exsanguine condition of the sufferer, ordered them to leave. Still they were not thus intimidated, but expressed their solemn conviction that the case was doing well, the wound filling up duly, and that all would soon be right. Asserting that they did not care for remuneration of their services, (though already in receipt of a goodly store of

compensation,) but wished to cure the patient, they held on to the case, in face of remonstrances to the contrary. Yet, as no change in the patient's critical condition occurred, his strength being exhausted and his appetite gone, with face pale and lips exsanguine, they were at last dismissed, and retired, though reluctantly, from the farther attendance of the case.

On December 5, 1865, twenty-three days after the receipt of the injury, we were called in, finding the following condition of the case: Patient lying on his face, which position he unremittingly had kept since his confinement, feeble, helpless and perfectly anæmic, with a frequent, weak, soft, and easily compressible pulse. A large, hard, painful, hot and conical swelling occupied the right nates, with a wound two inches in diameter, (surrounded by an erysipelatous livid blush,) filled with dried perchloride of iron, and emitting a most offensive smell. This being removed, a large quantity of dark, grumous and fluid blood of a very nauseating character was spontaneously evacuated. On the finger being introduced into the wound, an enormous cavity was found under the great glutæal muscle, filled with coagulated putrid blood, and capacious enough to hold a quart of liquid. Concentrated sulphuric ether being administered by Dr. W. W. Myers, the cavity was laid open by an incision about six inches long, downwards towards the trochanter major, and upwards as far as the fascia and glutæal muscle were undermined. About a pint of highly offensive blood, coagulated and liquid, was thus removed from the bottom, lined with a dirty, ash-colored and pulpy pyogenic membrane, emitting a smell as sickening as the blood, which it contained, the edges of the incision bleeding freely. The wound of the glutæal artery was now sought, after the cavity had been cleaned, in the sacrosciatic foramen above the musculus pyriformis, but could not be detected, bleeding having ceased. The pyogenic membrane having been removed from the bottom of the cavity, it was covered with perchloride of iron, and filled with oiled lint. The edges of the wound were then gently approximated by strips of adhesive plaster, and supported by a few turns of a bandage, a warm flaxseed meal poultice covering the hip. Patient was removed to his bed in the recumbent posture, to which he had been a stranger for many weeks, a nourishing diet, with whiskey

punch, quin. and iron, was ordered. Morphia, too, was administered at bed-time, and had previously been given in liberal and unmeasured allopathic doses by his homœopathic attendants. A change in the patient's condition was soon perceived. With comfort of position, freedom from pain, returning sleep, appetite and strength, the wound cleaned under the application of stimulating and detergent solutions, gradually filled up with healthy granulations and moderately suppurating, at the expiration of a week the deep dressings with lint were omitted, while the edges of the wound were drawn together with strings of muslin saturated with collodion; a graduated compress and a figure of 8 bandage around the hips, giving support to the cicatrizing tissues. So rapidly had reparation been going on, that at the end of two weeks the bottom of the wound had been closed, superficial suppuration only remaining in a very limited degree, the edge of the wound being held together by collodion dressing and bandage. In two weeks more cicatrization was perfect, strength had returned, all functions being normal, a compress and bandage were ordered to be kept on for some time longer, the patient resuming work soon after. There has not been any return of hæmorrhage after the operation, nor need there be any apprehension of the subsequent formation of aneurism of the injured glutæal artery, as the cavity had gradually been filled up with granulations, and supported by retentive bandaging.

The interest of the foregoing case will be of no ordinary character to the professional reader, as it reveals the great endurance of the human system under profuse and protracted bleeding; the hæmostatic power of nature in closing the bleeding orifice of a wounded artery of large size, by coagulating the vital fluid within its walls—serving as a hint to the surgeon to imitate her conservative resources, by supporting the injured tissues; the absence of pyæmic invasion, likely to occur in consequence of the retention of extravasated putrid blood and offensive matter in the cavity under the glutæal muscle; the rapid closure of a cavity freely admitting the fist of an adult; and the speedy recovery of the patient, he having gained strength sufficient for resuming work as soon as the wound was closed.

What the eventual result of *homœopathic surgery* in the above

case, if allowed to continue, would have been, can be easily imagined. *Twenty-three days of almost uninterrupted hamorrhage from a deeply seated artery, of no small calibre, being permitted to proceed unrestrained, and with no prospect of stoppage, is more than sufficient to settle its merits and claims for some time to come. Ignorance and mismanagement may not appear so palpable in the practice of the physician, but will be too plain and telling in that of the surgeon.*

ART. IV.—*Cerebro-Spinal Meningitis*—By E. S. GAILLARD, M. D., Richmond, Va.

No one would so do violence to the accuracy and safety of Medical literature, as to attempt an exhaustive essay, upon a subject proverbially obscure and in regard to which so little is satisfactorily or definitely known.

There are few diseases which the Physician is called upon to treat, in relation to which even the best medical libraries furnish such limited information, and the largest professional circles such confused, contradictory and perplexing testimony.

The object of the writer, therefore, is not to discuss the subject in extenso, but leaving this fruitful labor to more competent hands, cursorily to examine the facts that, during the last four years, have been brought prominently to his attention.

The history of this disease is limited in extent, and, if governed by its teachings, we are to conclude that either this obscure affection is of modern origin, or that early writers failed to appreciate its existence.

Dr. G. A. Moses, who has made careful examinations of all accessible authorities upon this subject, states that "the first recorded appearance of cerebro-spinal meningitis occurred in France, in 1310. It did not attract attention again until 1503; a disease almost similar, appeared in 1516 and 1517. After a very severe winter (1553) in Silesia, it carried off large numbers of the population. In 1580, associated as now with catarrhal affections, it

killed no less than 10,000 in Rome, 12,000 in Madrid and proportionally large numbers in other cities.

“During the civil wars in France, Ozenaur says ‘the armies, Catholic and Protestant, are decimated by a new disease, the subjects being attacked with a sudden and furious pain in the head.’ It lasted more than three months and but few were saved.

“Sydenham reports it in 1661, as selecting the young and most robust subjects, and partaking of the character of Typhus.”

In 1778 during an epidemic of typhus in Lyle, a disease appeared in all respects similar.

The disease, in more recent years, has appeared at various points throughout the United States and, during the late war, severe epidemics visited many points of interest in the Southern States. At Bowling Green, Grenada, Miss., New Orleans, Mobile, Charleston, around Richmond, and in different parts of Virginia, the disease prevailed, with much malignity.

It was not until 1830, that any name was given to this disease, and though autopsies do not invariably reveal lesions of the brain and cord, such injuries are, however, sufficiently uniform to warrant the use of the name selected.

Of the pathology of the disease, but little can be said. Speculations and unsatisfactory arguments have been repeatedly offered, but it is not expedient or useful to present them.

Testimony and recorded facts only can be accepted, as reliable premises, in the argument and, until these are placed in possession of the profession, it is unprofitable to expend attention, either speculative or deductive, upon this subdivision of the subject.

The diagnosis of the disease is certainly difficult, unless there be an epidemic prevailing and suspicion on this account be relatively aroused.

The most experienced and vigilant practitioner is frequently deceived, and so no one need blush to acknowledge that a case of cerebro-spinal meningitis has terminated fatally in his hands before any suspicion of the true nature of the malady had been aroused. So many have been mortified and censured, in this connection, that it is well to place this important fact prominently on record.

The symptoms of the disease vary in accordance with the

character of the attack. In some cases, where there are no true lesions of the nerve centres (with consequent loss or impairment of sensation and motion) but with inflammation of the meninges, the symptoms are neither as alarming, nor as pronounced, as is universally observed in the grave invasions of the disease.

There is just reason for believing, that inflammation of the nerve centres frequently and fatally occurs without actual lesion, death, it is presumed, being due, in such cases, to one of the many complications that are apt to supervene. This fact will explain the great diversity of testimony in the necrology of this disease. Able and competent examiners have failed to find, not unfrequently, evidences of actual lesion in the nerve centres, and have consequently denied not only the existence of these lesions, but the pathological deductions that have been based upon them.

The prominent and interesting fact, in this connection, is, that these lesions are observed in a large proportion of the autopsies of this disease, while death frequently occurs, from supervening causes which produce no such results.

Whether in fatal or non-fatal attacks of this disease, the symptoms are usually, if not invariably, declared suddenly—sometimes after a meal which has been evidently and fully enjoyed. In differential diagnosis, this fact is entitled to due weight.

There is usually prodromic headache, occurring for a brief period, followed, sometimes in an hour, by a chill or distinct rigor, with vomiting and purging. This last symptom is occasionally so marked and malignant in character as to entail a rapid prostration, with collapse and many of the symptoms of cholera. The patient usually, but not uniformly, soon becomes stupid, and his intellect is manifestly impaired. This condition passes sometimes into complete stupor. The headache increases, and acute pain is felt about the base of the brain. Convulsions occasionally occur, but usually the stiffness of the muscles of the neck and back, which is early apparent, rapidly increases, and, without marked convulsion, the patient passes into a condition of opisthotonos.

The pupils are sluggish in action, and trismus occasionally occurs. The reaction is seldom marked, and heat of skin, though sometimes apparent, is an exceptional phenomenon. Pains in the joints and

abdomen are frequently a cause of acute suffering. The tongue, at first natural in most cases, is soon covered with white fur, and then assumes, in addition to the manifestations observed in typhoid complications, a swollen and distorted appearance. In the Southern States, there has very seldom been manifested the diarrhœa, comparative or colliquative, observed in Europe. On the contrary, constipation has very frequently been obstinate and persistent. Dysphagia and difficulty of speech are frequently marked, many physicians regarding the last symptom as pathognomic.

The pulse is usually, after the first day, small and easily compressible; at first, natural or nearly so; next, it is increased in frequency; this condition subsiding, it frequently becomes abnormally slow, and continuing to be soft and compressible, it finally assumes the thready character, that is the herald of dissolution. The ratio, normally existing between the frequency of the pulse and respiration, is generally subverted, and the respiration soon becomes slow and laboured.

The skin is usually relaxed, and not unfrequently there is marked diaphoresis. Thirst is incessant. It becomes more and more difficult to arouse the patient, and finally hopeless coma supervenes, with the prodromic phenomena of approaching death.

It will be readily appreciated that, in a disease manifesting such a diversity of symptoms, with but little uniformity usually apparent, one fails to readily and promptly diagnose the true pathological condition of the patient.

Nothing of a satisfactory character is known as to the etiology of the disease, the causes assigned being, not unfrequently, as diverse and unconnected as are the localities of prevalence. Depressing agencies, hereditary, dietetic hygienic and climatic seem to be all predisposing and even immediate causes of the disease. It prevailed at the South during the past four years, usually in Winter and among those subjected immediately to its rigors, in connection with crude or insufficient diet. As a rule, in the camps, even where the attendant circumstances were similar in regard to diet and exposure, the negroes were the first to suffer, and exhibited the largest mortality. This may be due to that natural want of

resiliency which, as is familiar to those who have attended them in sickness, is a physiological peculiarity of the race.

This disease prevails sporadically, though, as a rule, it makes its appearance in the form of an epidemic, and, like all epidemics, it not unfrequently wears a varied livery.

No satisfactory evidence of its contagiousness has ever been presented, though, from its epidemic prevalence, many have been alarmed and induced to fly from imaginary contagion. It is well that the fact of its never having proved to be in the least contagious should be impressed upon the minds of all, when the disease makes its appearance.

The period of incubation is certainly unknown. The evidence so far on this subject is valueless.

Whether as seen in the States of the Gulf, or as in Virginia and Tennessee, in cities or villages, on the seaside or mountain side, in malarial or mountain air, in the pure atmosphere of the country or amid the depressing agencies of cities, the course of the disease seems unaffected by surrounding circumstances. The white soldier on the Rapidan or the negro labourer in Mobile, manifested usually the same symptoms and the mountain air, surrounding the one, seemed as little to influence the result, as did the seaside atmosphere which enveloped the other. It may be said then, that city or country atmospheres, *cæteris paribus*, do not alter the results.

There is one remarkable feature of this disease, as it has prevailed in the Southern States, and that is (contrary to its recorded history elsewhere), as many adults as children have been the subjects of its attack.

European writers dwell with some emphasis, upon the fact, that, as a rule, children under twelve years of age, were almost exclusively affected, and of these children all, or very nearly all, were males.

It is remarkable that the invasion of this disease is confined almost exclusively to the male sex. In the many cases visited, examined or reported, there was not a single instance, in which the female, either as an adult or child, had been attacked.

There are no complications, so frequently presented as to be regarded as special in character, though, in many cases,

complications of hereditary, hygienic or latitudinal origin are observed.

There seems to be no disposition to a recurrence of the disease during convalescence and generally the patient advances slowly, tediously, but regularly, to the normal condition existing previous to its invasion.

There are no sequelæ observed, deserving of special mention.

The prognosis in this disease is uniformly grave and disheartening. Indeed, one may reasonably expect to see most cases die, and to be surprised, as well as gratified, at each recovery.

In France, through a series of years, the mortality was often eighty-five per cent., and frequently far beyond this. A few practitioners have met with better success, but their records are but little less disheartening. Some of these death-statistics are as follows: 66 of 154; 24 of 40; 122 of 195, etc. Dr. S. C. Young states, that in the epidemic at Grenada, Miss., of thirty-five cases, there was not a single recovery.

Though no statistics of the epidemics in the Gulf States have escaped destruction, it may safely be said that the mortality in this disease, throughout these States, has not been less than sixty to eighty per cent. Dr. Moses, of Mobile, who saw very many cases, states that he did not witness a single recovery, and heard of but five. In the majority of fatal cases, death takes place before the fifth day, though occasionally the patient lives until the tenth, and, in rare instances, until the twelfth day.

Few diseases are so frequently fatal, and, as a rule, one would seldom err if he expected death.

M. Gaussaud states that he lost but two cases in one hundred and sixty-two, and ascribes this good result to the fact that, regarding the disease as a cephalalgic fever, due to miasmatic origin, he treated all of his cases with quinine. It is extremely improbable that the disease seen in this country can be due to such a cause, or that, with such treatment, the recorded result would be in any respect altered. Most of the epidemics seen in the Southern States occurred in Winter, when the air was pure and certainly uncontaminated by any malarial taint. There may have been sporadic cases in Summer, and possibly an epidemic at this season, but, if so,

the facts have never been mentioned by any of the numerous medical gentlemen interested in the study and investigation of this subject. That the disease prevailed in Summer, in the localities mentioned, is certainly very improbable, and no one, so far seen, has for a moment entertained the idea, that its etiology bears the least relation to malarial or miasmatic poison; nor did the use of quinine produce any material results.

It must be borne in mind, that the mortality mentioned is in those cases, where the disease is clearly pronounced.

There are cases in which there is meningeal inflammation, without loss of motion, sensation or speech, and, in such cases, the number of recoveries is very much greater. Where there is opisthotonos, or trismus, or loss of speech or motion, it may reasonably be expected that not more than eighty in one hundred cases will recover.

In treatment, the physician must expect to be disheartened and disappointed. It would be time-uselessly spent to record the varied forms of treatment which have been faithfully and fruitlessly instituted. In this disease no one has any special remedy to recommend!

Routinists, Empirics and Professional Egotists meet here, on common ground, with the scientific practitioners of the country, confessing a common disappointment and mortifying inefficiency. Clinical experience in this disease accomplishes at least one good result, in being the grave of presumption and therapeutic fanaticism.

It is generally conceded, that the most advisable form of treatment is the free use of the lancet and the scarificator, *before* any evidences of prostration or collapse are manifested.

The physician seldom sees a patient in time to institute such treatment, but when the opportunity occurs, experience certainly demands a prompt and fearless resort to it.

The use of mercury, both in full doses at the commencement of the disease, and afterwards for its constitutional effect, is admitted to be the most reliable form of treatment that can be adopted. The general testimony, both in Europe and in America, warrants the early and persistent use of this remedy.

Stimulants should be used, but there is no doubt that in the treatment of this disease, as in that of many others, the prevailing

tendency is to use these remedies unnecessarily and injuriously. Where stimulation is required, the use of rubefacients, with hot applications to the cutaneous surface, will most beneficially protect the brain and nervous system from the influences of alcohol, given, very commonly, with poisonous and overwhelming frequency.

In this disease, the centre and citadel of animal life are assailed, and it is certainly culpable to recklessly subject them to any influences that lessen the powers of successful resistance. Alcohol is certainly a therapeutic boon, but most physicians have seen its injudicious use destroy the last manifestations of nervous resiliency.

While, therefore, stimulation is frequently, if not universally, required, it should be most cautiously and tentatively instituted, and the adjuvants of friction and hot applications rigidly enjoined.

Opium may sometimes be admissible to relieve suffering and procure rest, but it should be carefully and guardedly used.

Chloroform, given to a partial extent by inhalation, will be found to relieve the suffering occasioned by muscular spasm, but, for manifest reasons, this should be administered only when the urgency of the case really demands it.

In this disease, as in most others, many incidental symptoms will be manifested requiring attention, but these will, of course, be treated on general principles.

In the autopsies, where death has occurred, with manifest lesion of the nervous centres, the phenomena apparent are so uniform in character, that, after a single inspection of the brain and its meninges, at the table, or after seeing a correct drawing of them, the scalpel will alone often solve the mystery of an unintelligible death.

The post-mortem appearances of the brain, in death from this disease, are characteristic, and it is therefore with special satisfaction and pleasure, that a correct representation of them is presented in the chromo-lithograph furnished with this article.

This drawing was made at the table, and, to Dr. G. A. Moses, due acknowledgment is made for the opportunity of presenting it to the members of the profession. So far as is known, there is no drawing of this character accessible, (if one has ever been presented,) and it is believed that the plate presented, both in delineation and colouring,

is so accurate, that any one familiar with it would be enabled to identify the disease, whose ravages are there depicted.

The dura mater is usually uninjured, while the arachnoid, both cerebral and spinal, almost invariably furnishes evidences of acute inflammation.

The large veins of the pia mater are turgid and much congested, and seen through the coat of lymph and greenish yellow pus, present an arborescent appearance, marked and distinct. This greenish yellow pus and lymph are also seen on the surface of the encephalon, and at the base of the brain it is found in quantity. It is also found in the subarachnoidal space of the cord, and it envelops the cord very generally.

The substance of the brain and cord are, so far as is known, seldom injured, though at times there is some effusion in the ventricles, and incipient evidences of softening in the nervous substance; as a rule, however, the substance of the brain and cord are found uninjured.

It is to be regretted, that, even after the sad and disheartening experience of so many epidemics, our knowledge in regard to this disease is so limited and unsatisfactory. Its etiology and pathology are equally obscure, and its livery so varied, as to render identification difficult and sometimes impossible. Its treatment is most perplexing and disheartening. The sick man lies doomed and helpless before us, and after a comparatively few hours of just alarm and conscious agony, passes into the dream-land of blessed delirium. Disease mercifully administers that "sweet oblivious antidote" which, in his conscious moments, he vainly craved from man, and soon even the ignorant bystander recognises the fact that—

"The life of all this blood
Is touched corruptibly, and his poor brain
Doth, by the idle comments that it makes,
Foretell the ending of mortality."

MEDICAL AND SURGICAL RETROSPECT.

1. *The Sunbeam and the Spectroscope.* By HENRY TOWNSEND, M. D., Professor of Physiology and Materia Medica, Albany Medical College, N. Y.

Lavoisier has very beautifully said—

“The fable of Prometheus is but the overshadowing of a philosophical truth: Where there is light, *there* is organization and life; but where light cannot penetrate, *there* death forever holds his silent court.”

If a sunbeam be allowed to enter a darkened room, it falls on the floor and forms a disc of bright light. This is radiated to the eye which conveys the impression to the brain, and the phenomenon of vision is established.

Should the hand be placed in the track of the sunbeam, the sensation of warmth is communicated, and we feel there is heat in the ray.

If a piece of paper covered over with chloride of silver, which is purely white, be placed so that the sunbeam falls upon it, a darkened track will be immediately produced over the space the sun's ray has passed, liberating the chlorine and leaving the metallic silver.

Such remarkable phenomena teach us, that we have to deal with agencies in the solar rays, which are in their visible effects very dissimilar.

Actinism, which means *ray power*, is now the term adopted to express the chemical principle of the sunbeam.

That these three functions of the sunbeam—light, heat and actinism—all differ from one another, may be thus proven.

A piece of black mica will allow no *light* to pass through it, but offers no obstruction to *solar heat*.

A plate of glass, stained apple green, with oxide of copper, is perfectly transparent to light, but opaque or impermeable to heat.

Glass which has been stained yellow with oxide or chloride of silver, allows a flood of light to pass through it, but permits no permeation of an *Actinic ray*.

And on the contrary, if we use a glass colored deeply blue, with the oxide of cobalt, though but very little light can pass through it, experiment proves that it offers no obstruction to the chemical rays; that is, it permits the permeation of the Actinic ray.

This fact of yellow glass interfering with and intercepting the actinism of the sunbeam, has lately been taken advantage of in pho-

tography. The photographer no longer shuts himself and his prepared plate in a dark dungeon; for now the old dark chamber, *camera oscura*, is beautifully illumined by the sun's rays passing through yellow glass, which effectually excludes the actinic—the chemical—rays which alone the photographer dreads in this part of his process, but which allows all illuminating rays to be transmitted.

The strength of evidence appears to be in favor of considering light, heat and actinism as three distinct principles or powers, active in regulating the great phenomena of nature. These agents are unceasingly at work. It is impossible to expose any body, however solid and persistent it may appear, to the influence of sunshine, without its undergoing a molecular or chemical change. In darkness, all bodies appear to possess the power of restoring themselves to their normal state. Should the sun shine uninterruptedly upon a granite monolith or a bronze statue, it would perish independently of any other destructive influences.

Night seems as necessary to secure the permanence of the inorganic world, as darkness and sleep are essential to maintain in healthful life the organized creations.

At the enormous distance of 95,000,000 miles from us is the sun; a great orb, having a diameter of 882,000 miles, forming the centre of the solar system. Not only is the earth and all the other planets chained to the sun by the attractive power of its rays, but their motions are determined by its motion, and the physical forces which regulate all cosmical phenomena, have their source within its body.

The sun is termed the fountain of light; it is equally the source of every other power, with which science has made us acquainted.

Since the time when Newton analyzed the solar beam, the advance of our knowledge has been most rapid.

We are acquainted with luminous rays which had never been seen by Newton; for of actinism, or the chemical power of the sunbeam, he knew nothing.

The beautiful phenomena of the polarization of light were unknown to him, and he had not the most remote idea of the existence of numerous *dark lines* crossing even the most brilliant divisions of the Newtonian spectrum, and which promise to advance our knowledge by the discovery of many sublime truths.

If we place a triangular prism in the path of the sunbeam, the rays are bent out of their course or refracted, and by this means decomposed into a beautiful flame-like chromatic image. Now if this solar spectrum be received upon a screen, it will be found to consist of several colored bands; crimson, red and orange passing into yellow from the least refracted end, while from the most refrangible one we have lavender, violet, indigo blue and green also passing

into yellow as they advance to the true centre of the spectral image.

These rays constitute the Newtonian spectrum, thus called because Newton was the first to examine with precision the relative condition of these colored bands, and to establish, with any approach to correctness, the laws regulating the relations of color and refraction. Anno Domini, 1675.

Beyond the most refrangible end of this spectrum there exists another class of rays, which are not visible under ordinary circumstances. If though the rays of light be intercepted by a solution of sulphate of quinine or of horse chestnut bark, or by a crystal of fluor spar, these extra spectral rays are rendered apparent. These rays, which were unknown to Newton, have been investigated by Prof. Stokes, who has named them the *fluorescent rays*.

They are luminous, probably, under all circumstances to those animals whose eyes are adjusted, as are the eyes of most of the night roaming creatures, to admit the rays of the highest refrangibility and to vibrate in unison with their vibrations; but unless peculiar conditions be established, the fluorescent rays are not sensible to the human eye.

Such, then, is the amount of our knowledge respecting the luminous principle of the sunbeam.

It must be remembered, that these rays vary considerably in the intensity of their illuminating power. The maximum exists in the yellow ray, and it diminishes as we recede from it towards either end of the spectrum.

The least refrangible, or the red rays, give a modified amount of light; but the maximum of heat exists in them. The most refrangible, or the blue end of the spectrum, is less luminous; but the maximum of chemical action is fixed at this extremity. The fluorescent rays beyond the spectrum of Newton, being only visible under the peculiar circumstances already mentioned.

If now we examine these beautifully colored bands of light when well defined upon a screen, with a small telescope, a new set of phenomena will become apparent. The spectrum is then seen crossed by a number of *black lines*. Every ray, even the most brilliant, will be found to have space in which there is an entire absence of light.

It was Dr. Wallaston who first observed these non-luminous spaces in the prismatic spectrum. Fraunhofer, however, was the first to make a full investigation of these lines and to publish a map of them, and they have hence generally been called *Fraunhofer's lines*.

These lines are of so fixed a character in relation to the colored bands of the spectrum, that if it be desired to indicate with great precision any special ray of the spectrum, we refer to them by their letters or numbers.

The origin of these *dark lines*, spaces in which there is no light, can scarcely be said to be yet resolved.

Fraunhofer, and others following him, thought that the light emitted from the photosphere, was from the first deficient in these rays, or that they were lost either by absorption in passing through the solar atmosphere, or possibly in passing through that of the earth. The investigations of Bunsen and Kirchoff, remarkable alike for the delicacy and caution observed in the inquiry, and for the refined nature of their deductions, lead us probably up to the true explanation of these phenomena.

These investigations of Bunsen and Kirchoff, from their exceeding interest, have lately been attracting great attention.

Angstrom discovered many *bright lines* in the spectra, from artificial light. He and others have proved that spectra obtained from the light emitted from incandescent mineral bodies, differ from that obtained from the sun; that the lines from artificial sources of light are in many cases peculiar, and that in the majority of instances, bright lines appear to take their place. So rigidly exact were the positions and characters of the lines obtained from differently colored flames, that spectral or prismatic analysis has been adopted as a means of determining the presence of exceedingly minute quantities of any substance.

These lines, *dark* and *bright*, have not only been employed in the analysis of the solid mass of the sun, but also in ordinary analysis, and the extreme delicacy of the indications, is proved from the discovery by Bunsen of two new metallic bodies; one called *Cæsium*, meaning bluish gray, and the other *Rubidium*, from the Latin *Rubidus*, used to express the darkest red color, which exist in infinitesimally small quantities in some mineral waters of Germany. Bunsen discovered these two new alkaline metals in the mineral waters of Dürkheim in the Palatinate; in examining the spectra of the alkalies contained in these waters, he observed some bright lines which he had never seen in any other alkalies which he had investigated. He was sure that no other metals but those of the alkalies could be present; because, by well known chemical processes he had separated every other kind of metal. Hence he concluded that these new lines indicated the presence of an alkaline metal, whose existence had as yet been overlooked.

So certain was Bunsen of his method, and so confident was he

that his bright lines could not fail him, that although the weight of the substance from which he obtained his result only amounted to the one-thousandth part of a grain, he hesitated not a moment, but began to evaporate forty tons of the water, in order to get enough material to separate out his new metal and examine all its chemical relations.

No sooner had he obtained more than a mere trace of the new substance, than he found that with it was associated a second new metal. He got from the forty tons in question only about one hundred and five grains of the chloride of one metal, and one hundred and thirty-five grains of the chloride of the other; in such minute quantities do these substances occur. Still owing to the skill and industry of Bunsen, the great chemist of Heidelberg, we now possess a chemical history of these two new alkalies as complete and well authenticated as that of the commoner alkalies.— Their names, which Bunsen has wisely chosen, indicate the nature of their origin and point out the property by means of which they were discovered. *Cæsium*, Bluish Grey, thus called because its spectrum is distinguished by two splendid violet hues. *Rubidium* owing to the presence of two bright red rays at the least refrangible extremity of its spectrum. Since the publication of the discovery of these metals, their salts have been found to be pretty commonly diffused, but owing to their close resemblance to the compounds of Potassium, they were not recognized as separate substances; in fact, had it not been for this new method, we should not have been able to distinguish them from the well known alkali potash.

Cæsium and *Rubidium*, occur in the water of almost every salt spring; and they have likewise been found in the ashes of plants, especially in those of beet-root, so that they must be contained in the soil; but in all these cases the quantity in which they are found is very minute. The mineral Lepidolite contains a certain quantity of *Rubidium*, which now may be obtained by the pound; but *Cæsium* is still extremely rare.

In a similar manner the existence of another new metal has been pointed out by Mr. Crookers, which is characterized by a spectrum containing one *bright green* band and has been called *Thallium* (Green Shoot). This has lately been prepared in somewhat larger quantities by Mr. Lamy, from the residue of the Belgian sulphuric acid chambers. He finds that in sp. gravity and outward properties it closely resembles lead, but that it possesses very peculiar chemical characteristics.

To render the foregoing phenomena and the hypothesis involved intelligible to those who may not have studied the subject, it will be necessary to enter a little into detail.

The image produced by decomposing a white sunbeam, consists of certain brilliantly colored rays, but those rays are crossed by spaces giving no light, *dark lines*, which dark lines are always found in the same places in the solar spectrum.

The spectra obtained from some artificial sources of light exhibit the colored rays shading one into the other; while those produced by some others consist of a series of *luminous bands*, separated by dark spaces, and *these luminous bands are frequently found to coincide with the dark lines of the solar spectrum*.

Kirchoff and Bunsen say, in arguing upon these lines and the hypothesis of their representing the solar dark lines: "It was proved from theoretical considerations that the spectrum of an incandescent gas becomes *reversed* (that is, that the bright ones become changed into dark ones) when a source of light of sufficient intensity giving a continuous spectrum, is placed behind the luminous gas. From this we may conclude that *the solar spectrum with its dark lines is nothing else than the reverse of the spectrum, which the sun's atmosphere would alone produce*. Hence, in order to effect the chemical analysis of the solar atmosphere, all that we require is to discover those substances which when brought into the flame produce bright lines coinciding with the dark ones of the solar spectrum." The next step in the process of the investigation instructs us in the fact that the vapors producing those colored flames are opaque to their own rays. That is to say, if we produce a yellow soda flame, and from it obtain a spectrum, showing the peculiar soda-lines in their bright yellow color* and then impregnate the air with some soda vapor, by volatilizing soda between the flame and the spectrum the *bright yellow lines* become at once a *black line*. This holds true for all the substances which have yet been examined. The colored bright lines are converted into dark lines, if the rays from the colored flames are made to permeate vapors of the same constitution as those which produced the particular spectrum under examination.

Prof. Kirthoff wishing to test the accuracy of the frequently asserted coincidence of the bright metallic and dark solar lines, made the following very remarkable experiment which is interesting as giving the key to the solution of the problem regarding the existence of sodium and other metals in the sun. He states: "I obtained a tolerably bright solar spectrum and brought a flame colored by sodium vapor in front of the slit. I then saw the dark lines *D* change into bright ones. The flame of Bunsen's lamp threw the bright sodium lines upon the solar spectrum with unex-

* This beautiful bright yellow line is observable when less than one twenty-millionth of soda smoke is mixed with air.

pected brilliancy. In order to find out the extent to which the intensity of the solar spectrum could be increased, without impairing the distinctness of the sodium lines, I allowed the full sunlight to shine through the sodium flame and to my astonishment, I saw that the dark lines *D* appeared with an extraordinary degree of clearness. I then exchanged the sunlight for the Drummond's or oxy-hydrogen lime light, which, like that of all incandescent, solid or liquid bodies, gives a spectrum containing no dark lines. When this light was allowed to fall through a suitable flame, colored by common salt, dark lines were seen in the spectrum in the position of the sodium lines. The same phenomenon was observed if, instead of the incandescent line, a platinum wire was used, which being heated in a flame was brought to a temperature near its melting point by passing an electric current through it. The phenomenon in question is easily explained upon the supposition that the sodium flame absorbs rays of the same degree of refrangibility as those it emits, whilst it is perfectly transparent for all other rays.

This opacity of heated sodium vapor for the particular kind of light which it is capable of giving off, was strikingly exhibited by Prof. Roscoe in one of a course of lectures on spectrum analysis, lately delivered by him in London, at the Royal Institution.

A glass tube containing a small quantity of metallic sodium, was rendered vacuum and then closed; on heating the tube, the sodium rose in vapor, filling a portion of the empty space. Viewed by ordinary white light, this sodium vapor appeared perfectly colorless, but when seen by the yellow light of a soda flame the vapor cast a deep shadow on a white screen, showing that it did not allow the yellow rays to pass through.

Incandescent gases and vapors give off light of certain definite degrees of refrangibility, or they furnish spectra consisting of certain fixed lines; and these incandescent gases or vapors absorb light of the same degree of refrangibility, as that which they emit. This after all is only the expression in relation to *light* of the celebrated statement made in regard to *sound*. *That a body absorbs all the oscillations which it can propagate.* Sound is produced by the vibration of the particles of gravitating matter, whilst light is supposed to be produced by a similar vibration of the particles of a non-gravitating matter called the luminiferous ether.

We are all acquainted with the principle of resonance; if we sound a given note in the neighborhood of a piano-forte, the string capable of giving out the vibrations producing that note takes up the vibrations of the voice, and we hear it answering the sound. The intenser vibrations proceeding in one direction are absorbed by the string and emitted as waves of slighter intensity in every direction.

All the *bright* lines of the spectra, produced by the vapors of known metals, which have yet been examined, appear to be represented by the *dark* lines of the *solar spectrum*. That is to say, dark lines always existing in the solar spectral image, correspond with every line produced by a spectrum obtained by burning iron; and just so with regard to the other metals which have been examined.

The conclusion therefore is, that the radiations from the centre of our system—the sun—producing the phenomena of *light*, *heat*, and *actinism*, are due to the combustion of metallic bodies such as we find on this earth.

The mass of the sun is, according to this hypothesis, regarded as being intensely incandescent. *Matter, in all respects similar to that with which we are acquainted, is undergoing combustion, and of course surrounding the sun with a vaporiform atmosphere, consisting of the emanations from the ignited nucleus.* But for this atmosphere—or *photosphere*, a better term—the solar spectrum would give a series of brilliantly colored *bright bands*. It has been stated that vapors are opaque to their own class of rays; therefore, since the rays produced by burning iron or magnesia or lithium or other metals, are not transmitted through the vapors produced by the combustion of those metals, the solar spectrum gives an extensive series of DARK BANDS. That every *black* line in the solar spectrum represents rays emitted from some metallic body in the state of combustion in the sun, is exceedingly doubtful. It has been already shown that many of the dark lines are due to the want of absolute transparency of our own atmosphere. But Kirchoff's view of the coincidence of the black lines of the solar spectrum with the bright lines of terrestrial flames is a fair deduction from his experimental observations.

Whilst these inquiries of Kirchoff, Bunsen and others have been progressing, investigations elsewhere have brought corroborative evidence. The party of Astronomers who went to Spain in 1860, to note with all accuracy the phenomena of the solar eclipse of that year, brought back evidence of tongues of flame or clouds glowing with the reflected lights of an intense combustion coming strongly into view when the bright light of the sun was observed by the moon's body.

Prof. Airy, states it as his belief "*that the sun is boiling up and that the prominences observed were fumes given off.*"

The sun's disc is covered by masses of curiously shaped and ever moving forms, called by their discoverer, Mr. Hastings, the "*willow leaves.*" The inference is that these are tongues of flame ever bursting from this incomprehensible mass, and dispensing light and its attendant forces to all the planets.

By the aid of optical science, of chemical experiments, and astronomical observations, we are advanced to the following deductions :

That the sun is constituted of matter similar to that which we find in this world. That this matter is ever burning, but, as Newton supposed, returning in a changed form into itself by the force of attraction in the mass.

That the physical forces which are developed by those vast chemical changes are radiated in waves through space.

Of stellar chemistry we have at present but little knowledge. Fraunhofer observed that the spectra of the fixed stars contained dark lines differing from those seen in the solar spectrum. A half century has elapsed since Fraunhofer made these observations, and our knowledge on this point is no further advanced, though we have become assured of the truth of his statements. In the spectrum of Sirius he observed no dark lines in the orange colored region, but in the green there was a distinct line, and in the blue two dark bands, none of which were seen in solar light. The spectra of other stars were likewise examined by Fraunhofer, and they appeared each to differ from the other. The difficulties attending the exact observation and measurement as regards dark lines in the spectra of the stars are very great, but doubtless with the vastly improved optical instruments of the present day, astronomers will overcome these difficulties. The astronomer royal of England, in his last annual report, announces that he is about to undertake the examination of the spectra of the fixed stars, and perhaps ere long we will know why Mars looks so red and some of the other stars so blue.

How wonderful is it that man by the power of mind is enabled to extend his investigations from the earth directly to the sun; and that he can determine the chemical compositions of a body millions of miles distant from him, is most surprising, and proves the divine origin of his intelligence; and even more than this has he accomplished by his philosophy, in proving the completeness of the balance of forces throughout the universe.

Vast chemical changes are taking place in the sun, and for every grain of matter altering its form there, an equivalent of physical forces is given out in a radiant state.

These rays pass through space and reach our earth, where they are employed in producing exact equivalents of vital and other phenomena.

The minutest terrestrial organism is the result of chemical changes taking place in the sun, which stupendous orb is the great laboratory where those powers are generated, by whose agencies all the planets of the system are regulated.

In obedience to the fiat of the Great Creator, who causeth the "day spring to know his place," those mysterious agencies, whose source man is now becoming acquainted with, are flooding out in profuse abundance from the sun, causing crude, inert matter to pulsate into life and beauty, upon every rolling orb, within the solar realm.—(*Monograph from the Author, Prof. Howard Townsend.**)

*This name has been inadvertently given as Henry Townsend, in the caption of this article.

2. *Treatment of Malarious Fever by the Subcutaneous Injection of Quinine.* By W. J. MOORE, of the Bombay Medical Service.

Since the year 1858, when Dr. Wood brought forward the hypodermic method of administering morphia, the plan has been extensively tried. Moreover, the results following the injection of morphia into the subcutaneous areolar tissue have, on the whole, been satisfactory, and the use of the alkaloid in this manner has now become an established practice in various obstinate neuralgic disorders. Other agents, as atropia, have also been used hypodermically with varied success, and I have latterly employed a strong solution of quinine for the cure of intermittent and remittent fever by the method of subcutaneous injection.

The success which has attended the practice, renders me desirous of calling attention to this novel mode of using quinine. I have so employed the remedy in upwards of thirty cases of intermittent fever, and in several cases of remittent, and with almost invariable success; the former class seldom requiring a second application—the latter generally subsiding after the fifth or sixth injection. Since the period I commenced to use quinine in this manner, I have been surprised and pleased to find in one of the medical periodicals, that the same plan has been pursued by Dr. Chasseaud, of Smyrna, who reports one hundred and fifty cures, and especially recommends the system in fever, complicated with gastric symptoms, when the exhibition of quinine by the mouth is often "inefficient, difficult and hazardous."

I use the strongest solution of quinine which can be prepared—viz., thirty grains of quinine, eight or ten drops of dilute sulphuric acid, and half an ounce of water. Of this I inject from half a drachm to a drachm, the former quantity containing some four grains of the active agent. With the exception of a little sulphate of soda, if the bowels are confined, I use no other remedy whatever in un contemplated cases of any type of malarious fever. When the spleen is enlarged, or if a leucocythemic condition is present, I

prescribe, as an additional curative agent, one or other of the preparations of iron—very frequently the citrate of iron and quinine.

I generally inject beneath the skin, over the outer belly of the triceps extensor muscle, and sometimes over the deltoid. I have, however, used the syringe with equal effect on the thigh and calf, and in cases of enlarged spleen, have thought the action of the remedy increased by injecting over that organ. I use a small glass syringe, with the screw action, and furnished with a sharp silver point, some half an inch in length. The latter is introduced beneath the integument half an inch or less, and the pain is not greater than the prick of a pin. Indeed, patients have frequently declared that they would rather submit to this process than taste the bitter of quinine. I have never seen the slightest inflammation or irritation follow the operation except in two instances. In one of these, the result was due to the instruments employed—namely, a small trocar and common glass syringe; in the other, to quinine in *suspension* being used, instead of in *solution*. Indeed, I have reason to believe that quinine in suspension is very irritating to the tissues, and this is what physiology would lead us to expect, as it is certain that when a fluid material is introduced into the areolar structure, it will be absorbed more readily than any solid mass could be. Therefore, to avoid irritation of the parts, and, also to prevent “choking,” I insist upon a perfectly clear solution of the alkaloid.

The best time to inject is shortly before the expected cold fit, but it may be done during the first stage, with the effect of lessening, and sometimes stopping the whole paroxysm. Latterly, when a patient presents at the morning visit, who expects an accession during the day, I have injected at the time, and nearly invariably the fever has stopped.

In cases of remittent, I have endeavored to inject during the remission, but do not wait for this period. In severe cases, the injection should be repeated at intervals of six or eight hours.

I believe four or five grains of quinine injected beneath the integument, are equal in their effects to five or six times that amount taken into the stomach; also, that the effects are more certain than when taken in the ordinary method; and, also, that relapsing attacks are less common than when the remedy is administered by the mouth.—*Lancet*.

3. On Rabies Canina. By M. BOUDIN.

In a memoir presented to the Academy of Medicine at Paris, on the occasion of a vacancy in the section of public hygiene, M. Boudin arrives at these conclusions:

1. The number of dogs in Europe may be estimated at more than twelve millions; the annual value of their food at more than twenty millions sterling; the yearly number of victims from rabies at several hundreds.

2. In the immense majority of cases, rabies is propagated by the bite of mad animals; in some circumstances, it appears to be also transmissible by the mere licking of the wound or excoriated skin.

3. Among the innumerable documents published on the matter, not a single case exists capable of constituting a serious scientific proof of spontaneous canine rabies.

4. Were the spontaneity of canine rabies rigorously demonstrated, it would still be so rare, that it would scarcely be necessary to take account of it in sanitary police regulations.

5. The old hypothesis, recently revived, which ascribes canine rabies to the non-gratification of the generative instinct, will not bear the least examination.

6. *The influence attributed to either temperature or dampness of the air on the frequency of rabies is in contradiction of facts.*

7. The alleged epizootics of rabies, described by authors, are naught but multiplied cases of communicated rabies, and the word epizooty, in these cases, ought to be erased from scientific language.

8. Science possesses no positive data on the extreme limits of the period of incubation of rabies in the human species; this period appears to be of seven months' duration in the dog (according to Mr. Youatt), and of fourteen months and a half in the horse.

9. No really pathognomic sign exists of rabies in the dog. Hydrophobia, properly so called, is completely absent in canine madness. The special howling bark appears to be of great value in the diagnosis of rabies.

10. Science possesses no certain data concerning the alimentary injuriousness or innocuousness of the flesh of mad animals, of the milk of cows and of goats bitten by animals affected with rabies.

[*Journ. de Méd. et Chir. Prat.*]

4. *On Diphtheritic Paralysis.* By M. ROGER, Phys. to the Hôpital des Enfants Malades, Paris.

M. Roger states that during the year 1867 there occurred 210 cases of diphtheria at the Hôpital des Enfants, and that paralytic symptoms followed in 31 cases. The proportion was really greater, inasmuch as several of the children were removed from the hospital prior to the period at which consecutive paralysis is usually developed, while others died before the period had arrived. M. Roger

believes that the majority of these cases is really a fourth or a third. Thus, in 1860, among 61 cases of angina simplex, 12 of typhoid fever, 33 of rubeola, 12 of scarlatina, 4 of variola, and 24 of pneumonia, not an instance of secondary paralysis occurred; and the same negative results were observed in M. Blache's wards. Of 40 cases of diphtheritic paralysis which have come under M. Roger's notice, the most frequent ages at which they appeared were from four to six years, there being 21 female to 17 male infants. In almost all cases the paralysis has commenced at the pharynx and velum palati, as exhibited by the nasal twang and dysphagia. The establishment of a relationship between its occurrence and the gravity of the primary disease is not easy, although it would seem to be a proof of a greater amount of blood-poisoning. But, in fact, it is in the milder cases that these paralyzes are found of most frequent occurrence; but this may be owing to the rapidity with which death most usually occurs in diphtheria. As to the relationship of the paralysis of albuminuria, often met with in diphtheria, M. Roger has not sufficiently examined the point, beyond being able to state that albuminuria is at all events not an essential concomitant. The usual period of the appearance of the paralysis is from the fourth to the eighth day, but sometimes dysphagia is observed from the beginning, while at others these secondary symptoms occur much later. Their mean duration is about a month. As a general rule, the prognosis is not unfavorable, although, in exceptional cases, death has resulted from paralysis of the respiratory muscles, or sudden suffocation. For treatment, M. Roger recommends especially tonics, iron, sulphurous preparations, and the application of electricity.—*Gaz. Heb. de Méd. et Chir.*

5. *Horsehair as a Substitute for Wire.* By THOMAS SMITH, Esq., Demonstrator of Anatomy at St. Bartholomew's Hospital, and Assistant-Surgeon to the Hospital for Sick Children.

Experience has ere this fully justified the claims put forward by Dr. Marion Sims, Dr. Simpson, and others, for the advantages of the metallic suture over threads of organic origin. For ordinary purposes, the cleanliness, security, and unirritating nature of silver wire leave but little to be desired in the way of improvement in material, and though in most cases such sutures answer all purposes for which they are designed, yet to some localities and to certain tissues they are not well suited. The adjustment of wire sutures to wounds of the eye-lid, foreskin, scrotum, and other parts where the integuments are lax and delicate in texture, is difficult,

and their withdrawal is painful, and liable to cause rending and laceration of the freshly united edges. The difficulty of introduction consists in the laxity of the parts, disposing the edges of the wound to twist and coil up far more readily than ends of the wire; while the withdrawal of the sutures is painful, owing to the rigid condition the wire assumes before its removal, and this, notwithstanding every precaution that may be taken to anneal it previous to its introduction. In allusion to this inconvenience, Dr. Mott, in his work "On Surgery," in speaking of metallic sutures, makes the remark: "The introduction of wire sutures is easy enough; the withdrawal is often attended with great inconvenience, and even with risk of tearing the imperfectly united edges of the wound asunder." (Vol. i., p. 335.)

With a view of finding a material for sutures as unirritating and as unabsorbent as wire, but more easy of adjustment and withdrawal, I performed during last spring a series of experiments on animals, to determine the suitability of horsehair as a substitute for wire in certain cases. The horsehair used was such as is ordinarily sold, by fishing-tackle makers. The experiments were performed upon dogs. The general results showed that there was no appreciable difference shown by the tissues in their tolerance of silver wire and horsehair. Both materials were equally unirritant; yet there was a difference in favour of horsehair in the greater facility of its adjustment and subsequent removal.

For the comparison between silk and horsehair, as illustrating the relative merits of the two materials for sutures, I venture to refer to the following experiments:

June 10th, 1861. Two wounds of equal length, dividing the entire thickness of the integuments, were made on opposite and corresponding parts of a dog's abdomen; four sutures were applied at equal intervals to each, horsehair being used to one wound, and fine ligature silk to the opposite. On the third day, both wounds looked alike healthy, and having their edges in close contact. On the fifth day, the edges of the wound with silk sutures were slightly reddened, and pouting a little between the points of suture; the opposite wound had united without suppuration. On the eighth day, three out of the four silk stitches had cut their way out, and next day the remaining one came away, leaving the edges of the wound just separated, but granulating healthily. Three days later the wound had almost entirely healed. At this time the opposite wound had healed up soundly around the tracks of the horsehair sutures, which remained *in situ*, exciting no irritation whatever, until the dog's death, a month after the commencement of the experiment.

May 3rd. The femoral arteries of a dog were exposed to the same extent, just below Poupart's ligament. Around the vessel on the right lower limb was passed a stout horsehair, and loosely tied; a suture being similarly adjusted around the opposite artery. A month after the operation the wound on the right side was all but healed, and was secreting a little serous discharge. At the same time the wound on the left side was swollen, its edges were everted and inflamed, and there was a profuse sanio-purulent discharge. Two days later the wound on the right side had healed around the track of the horsehair seton, which was retained, while around the silk on the other side there was profuse suppuration; the surrounding parts were red, tender, and much swollen; and as the animal's general health was suffering, and it was rapidly emaciating, the silk was withdrawn. The wound now speedily altered its character, and by June 20th was soundly healed. September 3rd, four months after its introduction, the horsehair still remained around the right femoral artery, exciting no irritation, the parts being soundly healed around the track of the seton.

The unirritating nature of horsehair, as a material for suture, is no less marked when applied to the tissues of the human body. It was used by Mr. Paget in a case of double entropion, the wound of the operation being in one eyelid secured with horsehair sutures, while the opposite was brought together with fine sewing cotton. At the end of the week, three out of the four cotton sutures had cut out, while at the same time all four horsehair sutures remained firm.

As a material for attaching the margins of the skin, and mucous membrane after circumcision, or other operations for phimosis, I have found horsehair most useful, having employed it both in children and adults. In one case particularly, where a complete circumcision of the foreskin, with a free division of the mucous membrane, was performed on a middle-aged gentleman, its good effect was remarkable. Six sutures were introduced, and excited so little disturbance that the patient was not kept for a single day from his business, which involved pretty active exercise. The wound healed without suppuration, and though left in, at the patient's request, some of them for fourteen days, the sutures caused no irritation, and were removed at last without difficulty. In the removal, the advantage of horsehair sutures over the wire is considerable, since, unlike wire, which, after remaining a few days in a wound, stiffens into a metallic ring, horsehair, when cut just aside the knot, either retaining its original elasticity, springs open, or if it has been long soaked in the wound secretions, it becomes soft and pliable. I would recommend this suture for wounds of the eyelid and other parts of the face, and to the loose integuments of the scrotum and penis;

since to all these parts I have either applied the suture myself with good effect, or I have seen it used by others at my suggestion.

But I can imagine that there are other uses to which it might be extended, and especially to facilitate the union of wounds of the conjunctivæ. For the purpose of suture, long white tail hairs are the best. Before being used they should be soaked for a minute or two in water, or they may be drawn once or twice through the moistened finger-ends. The suture may be fastened off in a double knot, but if the hair is stiff, a third knot is often required. It may be removed in the ordinary manner, seizing the knot with the forceps, and dividing the suture just aside of it. It is scarcely necessary to remark, that horsehair, as a suture, is not suitable for wounds, where there is much tension between the edges.—*Lancet*.

ECLECTIC DEPARTMENT.

1. *A Course of Lectures on the Progress of Surgery during the Present Century.* Delivered at the Royal College of Surgeons in England. By WILLIAM FERGUSSON, F. R. C. S., F. R. S. Surgeon to King's College Hospital, Professor of Surgery in the Royal College of Surgeons and Surgeon Extraordinary to H. M. the Queen.

LECTURE III.—ON LITHOTOMY.

The observations on lithotomy which I made last year had reference to patients under puberty, and were in a manner special, because I was desirous of giving expression to certain views of my own, which I had long entertained and taught in my hospital and professional labours.

I purpose to-day to speak of lithotomy in the adult, this being, perhaps, the best time and opportunity of adverting farther to this absorbing subject. It is indeed marvellous how much has been said and written about this operation; and most surgeons of experience have evinced the greatest interest regarding it. Mr. Crosse, in his celebrated prize essay on the subject, appended a list of authors who have written about stone and its cure sufficient to appal the most zealous bibliographer. Eight hundred and nine authors, or sources of information, have been referred to. Mr. Crosse's own work is of no small magnitude, and since he wrote, the numbers

have increased probably by hundreds. There have been writers about it, from the man who has actually volunteered his experience, amounting to that gained from a single case, to those who have drawn their ideas from scores. It is remarkable that one, with perhaps the greatest experience of any that ever lived, (Frere Jacques,) who was said to have operated on five thousand cases, should have left no personal record of his practice, and that even our own Cheselden who had a fair *cacoethes scribendi*, should have written so little and so obscurely about an operation on which his posthumous reputation so largely depends. Like Rau, he seems to have fancied that there was "no story to tell," and unfortunately, these men, in leaving others to explain their great, invaluable experience, permitted an amount of confusion to arise which will never be cleared away. Mery, Albinus, Douglass, and Cowper, were great surgeons and anatomists, but their aspirations appear below the level of the great masters whose operations they endeavored to explain.

There is probably no operation in surgery which has undergone more modifications, and yet the great feature, the grand hazard to life, has remained much the same in all ages. A stone cannot be extracted by lithomy without a wound of some kind in the bladder. By the hap-hazard method of cutting on the gripe, or the more precise mode of Cheselden or later anatomists, not only has the bladder been wounded, but a fluid, dangerous to life when in contact with any tissues but those provided by Nature for its escape, is permitted to touch new surfaces, on which it might induce fatal inflammation. The surgeon may control and limit the reach of his knife, but cannot make sure either of the effect of his manipulations or of the influence of urine when it gets into contact with raw surfaces.

The neck of the bladder, probably from being its natural outlet, has been the favorite part with the surgeon to give egress to the stone; but he has occasionally left it untouched, and opened the viscus in front, above the pubes, near its upper end, with a view to lessen the hazards; the latter being called the high operation, in contradistinction to that below the pubic bones, where a variety of modifications have been devised, few of which, however, I mean to say anything about at the present time. Perhaps "perineal" might be the most appropriate term for lithotomy in this locality, as the incisions are all made in this region, sometimes in front of the anus, either by the semilunar line described by Celsus, or the straight mesial line of Marianus—these being the oldest of the kind—or by a wound on one side.

In one style, every effort has been made to avoid a wound of the

rectum, while in another, the gut has been purposely laid open. But of all the incisions, those on one side of the perineum have been most frequently made, and they have included not only the skin, but all the tissues between, and the neck of the bladder, as also one side of the prostate gland. These incisions constitute the main features of lateral lithotomy, and it is difficult to say whether this term refers to the whole, or to that made in the skin, or that through the prostate gland. My idea is, that it should refer to the whole of the operation, as being effected on one side of the mesial line; yet it has appeared to me that some have considered the incision in the skin on one side as the most important feature, whilst others have referred chiefly to that in the prostate. There is no doubt that this was the direction in which Jacques, Rau, Cheselden, and most other great lithotomists, reached the bladder, and we in this country associate Cheselden's name so intimately with this style, that it is not unusual to refer to it as the English operation. No doubt Cheselden had followed a precedent, but it is curious in the history of the proceeding to perceive that surgeons were sent from France to report upon his operation, although we have every reason to suppose that Cheselden merely followed in the steps of Jacques, who performed many of his early operations in Paris, and of Rau and others, who had operated on the Continent. We are told that Jacques, having left Paris, improved upon his operation, particularly by using a director or staff as a guide to the bladder, a change with which, doubtless, Continental surgeons were as familiar as our English lithotomist.

The lateral operation, whatever may be its true signification, is clearly distinct in many important features from the mesial. In some respects, the old, probably original process, of cutting on the gripe, may be called a mesial operation, but the term has been used chiefly to denote the Marian operation, by which the incision to reach the bladder, and through which to extract the stone, was made in the raphe of the perineum in front of the anus. In some of its aspects this proceeding has been revived in modern days by Mr. Allarton, and it may be said to be, through the zealous exertions of that gentleman and others, again on its trial. Other modifications have been made upon it in modern times, particularly by Vacca and Lloyd, who each divided the front wall of the rectum to facilitate proceedings; but no kind of lithotomy has attracted so much attention, or been so frequently performed, as the lateral, and it is to it chiefly that I intend my present remarks to apply.

Two great objects have evidently been aimed at by all who have given attention to this operation—viz., rapidity of execution and safety of result; and with due regard to perfection, there can, in my

opinion, be little doubt that rapidity should be more in the mind of the operator than safety. If there is one operation in surgery in which dash is aimed at, more than in another, it is in this. Dash here means rapidity perfectly accomplished; and with some this is achieved by free incisions, such as greatly endanger the structures and organs involved, whilst with others an amount of energy or force may be employed which may possibly be as dangerous (if not more so) as division of tissues with the knife. In fact, it may be said that at all times, in the history of lithotomy, there has been a question as to freedom or limitation of the incisions. The old adage of Hippocrates, that wounds of membranous parts are dangerous, has doubtless had its influence here; and as he had seemingly applied this term to the bladder itself, we may consider the Marian operation, and all others which have been intended to spare this organ, as having been devised in accordance with this maxim: hence, probably, the modern disquisitions, since Scarpa's time to the present day, as to limited or free incisions in and through the prostate. These all appear momentous questions, as they seem to involve the life or death of the patient. Yet who can solve them? What man of acknowledged reputation can say which is the safest and therefore the best manner of proceeding—whether rapidity or slowness, free incisions or limited, are the best? Few well-known men in modern days can boast of an experience, such as that of Jacques, of Rau, or of Cheselden. Instead of the conjectural number of five thousand of Jacques, let us take the two hundred and thirteenth of Cheselden, which he chose to refer to, as his public practice in his operation. Of that number be lost only twenty: yet I have it from Sir Benjamin Brodie, as a tradition which he had imbibed, that in the latter years of Cheselden's practice, private as well as public, the results had been such as to cause him the greatest distress and mortification. But let us take it at the best of his own showing, and on inquiry we cannot preceive to what his success can be attributed. His own quaint idea that it was "to the happiness of a mind that was never ruffled or disconcerted and a hand that never trembled during any operation,"* cannot have any influence with an experienced lithotomist in this important question; for these qualities, certainly good of their kind, are such as have been possessed by hundreds and thousands, but they do not give us the key to successful lithotomy. Nor is it easy to see in what other respects Cheselden exhibited superiority. In dealing with the neck of the bladder, he seems to have cut at different times in a direction from and towards himself respectively. The incision onwards from the membranous portion of the urethra to the pro-

* Cheselden's Anatomy, Seventh Edition.

state and bladder seems, in my estimation, to have been the favorite and that most frequently performed; and my impression is that he aimed at rapidity of execution as a feature, for he in a manner boasts of having generally extracted the stone in a minute or two, more or less. Yet most that Cheselden seems to have done has been affected in modern times, although not always with the same measure of success. I by no means, on such an occasion as this, wish to impugn the published and rumored success of such distinguished men as Martineau, Blizard, Cline, Green, Crichton, Hodgson, and others; but this, so far as I know, is certain, that none of them have had the numbers that Cheselden treated.

The causes of the successful issue or fatal result of lithotomy, in cases reasonably well selected and operations reasonably well performed, are problems, of deep interest. It is now two-and-thirty years since I first performed lithotomy, and with a large personal experience, I feel unable to offer decided opinions regarding these problems. Hearing, as I have occasionally, of wonderful success, I have had my suspicions that the expression has been used by some to indicate the mere extraction of the stone, and not the final issue of the operation. Breaking a stone in lithotrity, and extracting in lithotomy, have I fear been taken by some as the standard of success—the issue has been ignored! There seems to me to be a mystery associated with lithotomy that has not yet been solved. For palpable errors there is an explanation; but when to all appearance, there has been perfection in the operation, and yet death has been the issue, I confess that I have been puzzled beyond measure. I have performed lithotomy without a shadow of stain, tax, or tension on the parts more than the needful manipulations, yet the issue has been fatal; and again I have been conscious of an amount of rudeness such as made me tremble for the result, yet an untoward symptom has never once appeared. I have, indeed, seen badly-performed operations where nothing but death could have been anticipated, and where the anticipation was realized; but I have known such an amount of force and haggling end successfully that I have been amazed. I have known several strong men to pull at a nine-ounce stone for an hour, when the patient has been put to bed well-nigh exhausted; yet on the stone being extracted eight days afterwards the final result was perfect. With such experience as I have, I cannot pretend to explain these seeming mysteries. Working on inanimate material, no doubt precise manipulation must be of the most perfect effect; but when the phenomena of life are afterwards involved, the result seems in most instances to be beyond human control. Cutting or sparing tissues or parts seems to me of little moment as regards the grand result; yet as it may be

thought that these doubts and hesitations are scarcely becoming on the part of a Professor of Anatomy and Surgery to the Royal College of Surgeons of England, I shall endeavor to put some of my views in a more palpable shape and aspect.

Much stress has in modern times been laid upon cutting that part of the pelvic fascia which is reflected upwards on the neck of the bladder from about the middle level of the prostate; but I am very doubtful of the pathological views on which the objection is founded. I doubt if such division is often made, and supposing it is made, I doubt much the result which has been said to follow as a matter of course—viz., infiltration of urine, leading to suppuration and death. Infiltration I believe to have been the bugbear of modern lithotomists. With my own experience, and all that I have observed otherwise, I declare that I have never seen a genuine case of urinary infiltration. I have seen cases where the surface of the wound has evidently been irritated by the urine, but I doubt if any serious evil has ever arisen on that account. If there has been unhealthy or fatal inflammation, I fancy that it has come concurrently from some other cause—some unhealthy and unforeseen state of the constitution. There is such resemblance between infiltration and diffuse inflammation of cellular tissue, that they are, I believe; often confounded. Serous and lymphatic effusion so much resembles urinary infiltration, that when it occurs in the track of the wound in lithotomy, such a mistake, as I consider it, as that I allude to, is not unlikely.

Infiltration of urine, I maintain, never takes place, when there is such a free passage, as that after lithotomy. The diffuse swelling in cellular tissue, so characteristic of infiltration, is never present after lithotomy, even in fatal cases. Surgeons are familiar with ordinary infiltration, and how readily the urine escapes when incisions are made in such cases. All my experience leads me to say, that infiltration is one of the rarest causes of death, after lithotomy.

Whilst making this statement, I am not disposed to refer lightly to that free incision of the prostate, which implies a division of the reflected portion of the pelvic fascia. On the contrary, I advise that it should be left untouched, and declare my conviction, that stones of great magnitude may be removed without such free use of the knife. There are those who, in this operation, have come well up to Mercutio's idea of a fatal wound: "Not so deep as a well, nor so wide as a church door." *

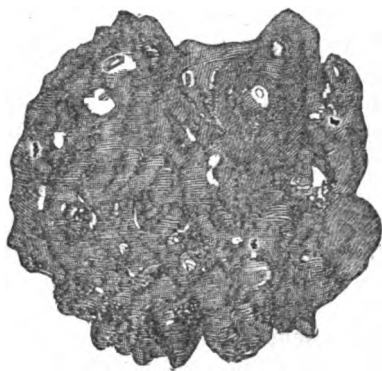
Whilst admitting that patients have often recovered, after huge and so-called free incisions about the neck of the bladder, I am, however, strongly impressed with the idea, that a limited incision is

* Romeo and Juliet, Act III, Scene 2.

safest. It implies, in my estimation, less injury to important parts. But I scarcely recognize, as legitimate, any incision in the neck of the bladder, which will permit the egress of a stone, without at the same time a certain amount of dilatation.

Stones of one inch or more in diameter are of very common occurrence, and the circumference, three inches, required for the egress of these is in proportion. Now, I believe that if the surgeon aims at making an incision in the neck of the bladder equivalent to the free egress of these without stress or strain, he makes a wound of the most dangerous magnitude, from which the patient is not likely to recover. I dare not—I cannot—say that wounds of the membranous portion of the neck of the bladder beyond the prostate are certainly fatal; on the contrary, I believe that they are not so on all occasions; but I am as firmly impressed on this point, that there is great comparative safety when a rim of prostate is left at the base of the wound of that gland. I am equally confident, too, that stones of large size may be removed through a wound of that gland. I am equally confident, too, that stones of large size may be removed through a wound of this organ which has been, as regards the application of the knife, of comparatively limited extent. Here (Fig. 1) is a stone fully six inches in circumference, which

FIG. 1.



was removed through a wound not at first larger than sufficient to admit the forefinger of the left hand; yet the patient never had a bad symptom. The increased magnitude was gained by dilatation, which was chiefly effected in drawing the stone out within the grasp of the forceps.

These latter remarks, it will be perceived, bear upon a very

interesting and much controverted question, as to limited or free incisions in the neck of the bladder. I doubt if this question will ever be settled, but on my own part I have no hesitation in declaring my preference to a limited incision, for I believe as implicitly in dilatation here as I do in the neck and mouth of the uterus in parturition, even though the latter is effected by nature, whilst the former is by force on the part of the surgeon. I am so strongly impressed on this point, that I do not object to the term laceration, which has often been applied to the somewhat forcible extraction of a stone; for my opinion is, that laceration, provided a margin of prostate is left, is safer than the so-called free incision, which fairly divides the left lobe of the prostate, and runs into the membranous portion of the bladder. But in advocating a limited incision internally, I am equally convinced that a free external wound is of importance, for it greatly facilitates the deeper and more delicate part of this operation. When the distance between the surface and bladder is great, partly from obesity, partly from enlargement of the prostate, if a free incision be made, the knuckle of the forefinger may be buried in it, so that the point can be more readily placed within the prostate or the bladder, whilst it permits the more free and safe use of forceps, both in passing them into the bladder and in extracting the stone. Without this free space, there is a risk, in introducing the forceps, of passing them between the bladder and pubes, or between the bladder and the rectum. Moreover, in extracting a large stone, there is a freedom given to the leverage of the forceps, which, whilst much appreciated by the accoucheur, has been too little thought of by the lithotomist.

The difficulties of lithotomy in the adult are, I apprehend, largely of the surgeon's own making. He limits the wound, perhaps, making it too narrow throughout, particularly on the surface; or in not penetrating into the bladder, whereby he runs the risk of the blunder of making a space between the pubes and prostate, that which, in my lecture last year, I endeavored to impress emphatically, as the grand source of failure in the operation in children; or he places it too high in the perineum, thereby setting his work too much in that dangerous strait, the angles of the pubes; or he does not make a proper use of the forceps, either in clutching the stone, or in drawing it from the bladder.

The greatest cause of trouble, and even failure, in the actual completion of lithotomy, I believe, depends upon not grasping the stone. I have often seen all the steps well performed up to this one; but here difficulties, seemingly unaccountable, have arisen, and the worst evils have followed. I was early impressed with this feature. An hospital surgeon of limited experience operated

on a case of a stone, and did the work well until he began to extract. Here the easy movements ceased. No sooner did he attempt extraction, than the forceps slipped. Effort after effort was made, but all to the same effect. In all surgery, I do not think that there is so much concentrated energy of mind and body required as in lithotomy, and it is the more exhaustive too, in my opinion, because it has in a manner to be concealed. This was probably the effect in the case I now allude to. The operator, a man of considerable physical powers, became exhausted, not, however, until the lapse of about an hour, and when he and the patient were both well nigh in a similar plight, another surgeon, a master in the art, took the forceps, and extracted the stone with the utmost facility. It was the size of a lemon, and most operators would have had some trouble with it. The fault with the beginner here was, that he did not take the stone fairly within the clutch of the blades; he only nibbled at the end. But the second man put the blades upon its sides; in other words, he inserted them deeper into the bladder, whereby he was enabled to grasp the stone by its middle, so that it could not escape from the instrument, and the small resistance of the neck of the bladder was as nothing compared with the energy of his hand and arm. It has fallen to my lot, on two different occasions, to extract the stone, eight days after failure by other surgeons. In both instances, I believe that the cause of failure was, that the stone was never properly within the grasp of the blades. It is by no means an uncommon supposition, that the bladder, in certain cases, encircles the stone so closely that there is no room to get the blades between; but this I fancy is a great error. No bladder that I have ever seen could resist the surgeon's power in expanding the blades, and pushing them in the proper direction.

As to adhesion of a stone to the bladder being an impediment to the fair performance of the operation, I believe it to be a myth. I certainly have seen instances, where the bladder and stone have held close approximation, by asperities on both, but it never appeared to me that these could for an instant withstand the influence of the surgeon's hand on the forceps.

Cysts containing stones are occasionally met with, and I have seen some remarkable instances; but we hear more of these from bunglers, who have operated only several times, than from those who have had large experience.

The dangers of this operation during performance are indeed few and far between, particularly when the incisions are made with a scalpel of moderate dimensions; but of course this, in unskillful hands, might prove as fatal as the dagger of Jacques, the cutting gorget, or any other ill-proportioned, ill-contrived weapon which

has from time to time been used in this classical operation. I give the preference to this instrument over all I know, yet, if rashly used, it may do harm, equal to any I ever heard of.

A wound of the rectum I look upon as of little moment, as regards the final result of the operation. There is little or no additional danger to life in such a wound; but it is a blot in the operation which should be avoided. The accident has happened to me repeatedly; I have recognized it twice in post-mortem examinations, the patients having died from other causes, when I was not aware that it had happened. I have seen it once in the form of a communication between the gut and the membranous portion of the urethra, months after the external wound had healed, and where, being very small, it gave the patient but little inconvenience. Twice I have recognized, during the operation, that the accident had happened, and in both of these I considered that the rectum had been torn whilst extracting. Here is one of these stones (Fig. 2); and considering

FIG. 2.



that this was taken from a youth of seventeen, in whom the pelvis was indifferently developed, the accident is not much to be wondered at. The other was of equal magnitude, but in this case the parts were more developed. In both instances the entire wound healed up, and, in so far as I could make out, no evil whatever resulted.

In two cases I have seen reason to attribute death to hæmorrhage. One of these I referred to last season, in speaking of my experience in children; the other was in an adult between fifty and sixty; but in both I fancy that shock had as much to do with the fatal issue as loss of blood. In another case the operation of lithotripsy has been considerably more successful in regard to saving of life than that of lithotomy.

If I am not mistaken, sir, this is the first time that such a comparison has ever been made by a British surgeon, who has had large experience in both operations, and I trust that my example may induce others in high places, who have dealt largely with both sides of the question, to give us the benefit of their experience.

Here, sir, is the collection [pointing to between two and three hundred preparations] to which I referred at my last lecture, as having been made from my own experience—by my own hands I may say. There are examples of comminution from lithotripsy, enough to satisfy those not much acquainted with the operation : and entire stones, the result of lithotomy, exhibiting specimens from a few grains in weight to nine ounces—from one solitary stone in the bladder to forty-two. I little thought, sir, when I began making this collection that it would include such a goodly number, or that I should ever have the honor of exhibiting it at the Royal College of Surgeons of England. Here is the first, removed in 1832,—here the last taken out (in 1865), shortly before these Lectures began. Here is the most tiny—a thing not larger than a common pea ; here those which weighed from four to nine ounces. Here (Fig. 1) a single, solitary, grim, savage-looking mulberry, which held possession of its vesical home for forty years ; here are numbers from two to forty-two, smooth and less formidable in aspect, yet equally painful and dangerous to the sufferer. A momentary glance can sweep over the range ; but it is only those who, like myself, have been engaged in such work, that can estimate the days, the nights, the months, the years of anxious thought and labour, associated with the results which I have now put before you.

2. *Introductory Address, on the Progress of Medicine, and History of Disease, delivered at the College of Physicians and Surgeons, New York.* By T. GAILLARD THOMAS, M. D., Professor of Obstetrics, etc.

* * * * *

Who among you, even upon this threshold, does not thrill with pride at enrolling his name as a disciple of an art which, coeval with society, dates back to the earliest literature of the Latin tongue, has outlived empires and nations, was the chosen work of Christ himself, and which numbers among its votaries the name of Hippocrates and Galen, Celsus and Avicenna, Morgagni, Paré, Harvey, and a host of others, whose memories shall live so long as our planet shall exist, surrounded by an aureola of glory, and embalmed by the gratitude of mankind ? This, gentlemen, is the profession to which you now declare yourselves prepared for devotion. Be not deceived by the flippant language of a modern radicalism, which would have

you believe that you are merely joining a feeble sect, which, born but yesterday, may live but for to-morrow, to be then annihilated by a more recent doctrine, the offspring of the brain of some enthusiast or lunatic. Be not beguiled into the belief that the science of medicine has been and is changing as the ocean's shore; that what it was a century ago is almost forgotten in what it is; and that its present will soon be blotted out by its future of a few years to come. It is not so. The profession of Hippocrates will be yours, altered and illuminated, it is true, by modern improvements; but the same in its noble object, the same in its exalted requirements, the same in its spirit of devotion, unchanged by the surges of quackery and the aspersions of an oft-deluded public. Like some stout ship which has crossed the ocean, dashing its billows with contempt aside, disregarding its tempests, and gallantly resisting its thunders, the science of medicine has passed steadily onwards through centuries of time, despising the attacks of charlatanism, and at our day stands preëminently firm as one of the bulwarks of society.

He who would enrol under such a banner, should carefully question himself as to his fitness to meet its requirements; no sordid thought should weigh in the balance; no petty interest should guide him. He whose mental capacity will not permit him to rise to the level of a high-minded, magnanimous, and Christian gentleman, should seek some other sphere of labour. It has been well said, that "the profession of medicine is the noblest of professions, the meanest of trades."

Every medical class is divided, by the character of the curriculum adopted in this country, into two sections; the first being composed of those who are passing through their novitiate, and devoting themselves to the theoretical parts of the course—Anatomy, Physiology, Chemistry, Materia Medica, &c.—and the second, of more advanced pupils, who, having finished one or two terms of study, and anticipating soon to take the doctorate, are studying diseases at the bedside of the sick. The courses thus followed are known as didactic and clinical. It would indeed be difficult to say which of these is the more important, for neither should in anywise be neglected. The first prepares the mind to avail itself of the second, and the second, followed under the supervision of scientific practitioners, teaches the student how to investigate disease, trains his mind in a proper mode of thinking, and makes him aware of the acuteness of observation which may be developed by cultivation. Were I called upon, however, to decide, I should advise the neglect of the clinical course, rather than the didactic; for without a scientific basis no mind, however brilliant it may be, can ever hope for excellence in medicine, and will likely fall into the channels of

empiricism ; while, with a thorough groundwork of scientific and purely theoretical knowledge, a keen observer may make himself a skillful and able practitioner.

Let me, then, urge those who are beginners, in the strongest terms, to confine themselves to the rudiments of their education, and to avoid the folly of endeavoring to study disease at the bedside, the history of which, as observed by others, the means of investigating which, and the alterations exerted by which on the physiological condition of the patient, are unknown to him. How irrational would it be for one to study a case of poisoning by arsenic, when ignorant of the chemistry of the poison, and the anatomy and physiology of the stomach which it has injured ! And yet, this is just what the student does in every disease which he essays to study before passing through the preliminary course. As well might the scholar strive to read, who has neglected to master the alphabet.

Probably, however, a majority of you have passed through this period, and are prepared to enter upon the study of the habits and character of the great enemy, for whose destruction our order was and is created, and to compass whose overthrow we delve into the bowels of the earth, fathom the depths of ocean, pluck out the secrets of the massive rocks, and draw down the lightnings of heaven itself.

Were I to advise you in studying disease in the hospitals, dispensaries, and clinical rooms, to avoid studying the cure of disease, you would smile, and ask " why then study at all ? " I will not go so far as to give this counsel, but so sure am I that great injury has been done, not only to students, but to the profession itself, from the earliest times to the present, by a devotion to mere therapeutics, causing a neglect of points which would have directed and altered the means of cure, that I must specially guard you against being thus distracted from the closest observations of the natural phenomena, or, as it has been termed, the natural history of disease. By this term is meant the phenomena, characteristics, duration, and results of morbid conditions left to nature, *i. e.*, uninterfered with by medicines, and simply guarded from extraneous disturbing influences. The subject has been greatly neglected for centuries, and of such vital importance do I regard it, as bearing upon your future proficiency as physicians, that I make it my theme for this evening's address. Remain ignorant of it, and you shut the gates of the avenue which leads to progress in medicine ; master it, and your therapeutic knowledge will become certain, and its application a science. You would naturally conclude, that the first study which would have engaged the attention of the pioneers in the art of healing, would have been that of the nature of the affections which

they desire to cure, so that they might have learned what assistance was required ; and, by a comparison of the results of unaided with aided cases, concluded how far they had met with success in their efforts. But, unfortunately, in the infancy of our profession, this was not done. *Men leaped to the conclusion, that all diseases tended to death*, and at once proceeding to give aid by a variety of means, soon blinded themselves, as to the results. When the malady followed its natural course to recovery, they laid to their souls the flattering unction, that they had cured it ; and when their interference turned the scale for death, they attributed the unfortunate issue to the malignancy of the disorder which had resisted their well directed efforts. All this made more and more impenetrable the veil which hung over nature's dealing with disease, and the ignorance thus fostered is, for me, the key to many mysteries in our science. It reconciles the similarity of result obtained by modes of practice diametrically opposed ; gives me the reason for the success of systems of charlatanism, based upon the most preposterous tenets, and explains the confidence felt, even by wise men, in therapeutic plans which were utterly without merit.

To convince you of the truth of these views, I will claim your attention, as we take a retrospective glance at some of the methods of treatment adopted for diseases, during the past two centuries, and, having laid them before you, I shall compare their results with those accruing from an entire neglect of medication, and leaving the disorders to the hand of nature.

Should we discover that nature, unaided, accomplishes better results than many of these methods have done by active interference, then it is plain, that such interference was injurious.

Should we, after arriving at this conclusion, discover no process by which nature can be aided, and her efforts made more effective, it would plainly be our duty to leave her to her work.

But, should we learn that a given plan of treatment possesses the power of adding to her efficiency, shortening the natural course of disease, and diminishing suffering during its progress, it is equally plain that its adoption is pointed out, both by reason and humanity.

It is truly astonishing to look back into the musty tomes of by-gone centuries, and see the great changes in the treatment of diseases which have occurred, from time to time, as we advance to the present ; and still more wonderful is it to learn, from incontestable evidence, that, although incongruous, contradictory, and often entirely opposed, they all cured the ills of flesh, and consequently commanded the confidence of those who practiced them, and those who relied on them for relief.

Let me cite for example the practice of Sydenham, whom I quote

as the best representative of the physicians of the seventeenth century, about the middle of which he flourished. His directions for treating pleurisy, (which, however, he evidently confounded with pneumonia) are these: "Bleed from the arm of the affected side ten ounces.

R. Red Poppy Water, $\mathfrak{z}$ iv.; Sal Prunella, $\mathfrak{z}$ i.; Syrup Violets, $\mathfrak{z}$ i.

M. et ft. haust, to be taken directly after the first bleeding.

R. Sweet Almonds, v.; Melon Seeds, $\mathfrak{z}$ ss.; Gourd Seeds, ss.; White Poppy Seeds, $\mathfrak{z}$ iii.; Barley Water, O. ss.; Rose Water, $\mathfrak{z}$ ii.; Sugar Candy, q. s.

M. et ft. emulsio secundem. $\mathfrak{z}$ iv. to be taken every four hours.

R. Pectoral Decoction, O. ij.; Syrup Violets, $\mathfrak{z}$ ss.; Syrup Maidenhair, $\mathfrak{z}$ ss.; Sugar Candy, q. s.

M. et ft. Apozem., one-half pint to be taken daily.

[We stop here for breath (as the poor patient likewise probably tried to do), but this is not all.]

R. Ol. Sweet Almonds, $\mathfrak{z}$ ii.; Syrup Violets, $\mathfrak{z}$ i.; Syrup Maidenhair, $\mathfrak{z}$ i.; Sugar Candy, q. s.

M. et ft. linctus, to be taken frequently.

Oil of Sweet Almonds or fresh Linseed Oil may be taken alone.

R. Ol. Sweet Almonds, $\mathfrak{z}$ i.; Ol. Lilies, $\mathfrak{z}$ i.; Ointment Marsh Mallows, $\mathfrak{z}$ i.

M. et ft. lint., to be rubbed on the affected part night and morning.

Lay a cabbage leaf over the part, repeat the bleeding three times more (i. e., ten ounces each time), so as in all to make four days, as long as the pain and dyspnœa continue."

This is copied verbatim from the writings of Sydenham, the medical exponent of his time; compare it with the treatment of a case of pleurisy or pneumonia at our day, by our most enlightened practitioners; a few cups are applied to the side affected, an arterial sedative or sudorific is administered, all the functions of the body are carefully watched, the diet made simple and nutritious, and our success, as proved by statistics, is infinitely superior to that of our predecessors.

It would be useless to quote more; this is a fair and honest example of the therapeutics of those times. The disease seemed to be regarded as an enemy besieged in a town, which was to be destroyed, even at the risk of destroying the town itself.

In the first quarter of the sixteenth century, we are informed by Ambrose Paré, who lived at that period, that the surgeons treated wounds by separating their lips and pouring in boiling oil to check the flow of blood. Unquestionably, the wounds thus treated

generally got well, or the practice would have been discontinued. To-day these same wounds would be treated by the application of cloths, soaked in clear water, and still do they go on to recovery. Both methods, though so opposite and unlike, resulted in the same issue—recovery.

But we need not refer to past history to find plans of treatment as much at variance with each other as those just mentioned are, with the views of the present, and yet are supported by men of rare judgment, and practised with success in similar diseases.

In our own time, we see M. Bouillaud, of Paris, bleeding in pneumonia, pleurisy, pericarditis, rheumatism, and many other affections, in which Dr. Todd, of London, systematically stimulated with brandy and fed upon nutritious food; and not only did they do so, but their respective schools endorsed their views, each with equal warmth; imitated their leaders, and claimed respectively the most brilliant results. Now, it is evident that both schools could not have been right; one, at least, must have done injury to the disease treated, if it be admitted that the other did good; and yet, in the face of all this, I tell you that my belief is, that both parties reported recoveries truthfully, and that both parties were sincere in their belief that they contributed to the gratifying results.

There must be a key to this mystery—a solution of this paradox. For me, there is none other than this, that *diseases have a natural tendency to recovery*, and that the Almighty has, in His infinite wisdom, endowed the animal frame with an inherent curative power which often defeats the machinations of misguided men.

If the professors of medicine have been misled by a neglect of the study of the natural phenomena of diseases, what must have been the baneful results of the complete ignorance of this subject, on the part of the people? It has offered a wide field for quackery, and caused whole communities to pass under the yoke of deception and imposture. This has been so in all ages, and at no period more so, than the present; for, alas! we live in the age of quackery, and doubly, alas! is America proving the very Canaan of the tribe. If the sons of Paracelsus ever looked forward to a promised land, they have found it. Columbus discovered their true El Dorado.

It is an undoubted fact, that no system of charlatanism has ever flourished, which has not reported, and reported truthfully, thousands of recoveries under its ministrations, however injurious or harmless its modes of treatment. However at variance their doctrines, however ridiculous their tenets, however inefficient their therapeutics, all which have run the course inseparable from systems of impostures, have unquestionably published to the world

recoveries from grave disorders, which no man, who consented to draw the scales of prejudice from his eyes, could gainsay. But to be convinced of the truth of this apparently singular statement, follow me, as I investigate a few of the popular fallacies which have appeared during the past hundred years.

Towards the close of the last century, a physician, named Perkins, who resided in Connecticut, made a most wonderful, startling, and momentous discovery. He discovered that certain metallic substances had, when applied to the animal body and passed along it like the poles of a battery, the glorious power of drawing out diseases, very much as the magnet would draw a needle from your pocket. In accordance with this knowledge, he constructed two metallic stems, about three inches long, blunt at one extremity and pointed at the other, one being composed apparently of brass, and the other of steel, though this is not certain, as, in a moment of moral obliquity, doubtless, the discoverer obtained a patent for and kept them secret.

No sooner was that great discovery of Dr. Perkins made known, than the trumpet of fame spread its reputation, with lightning speed to the uttermost parts of the earth. Certificates asserting most excellent cures from the highest dignitaries of the land, from judges and generals, from leading merchants, from ladies eminent for charity, and, I need not say, great numbers of endorsements from eminent divines, poured in like a paper flood.

Dr. Benjamin Douglass Perkins went to London, so as to give England an opportunity of benefitting by the great invention, and soon it was discovered that what would draw out disease from an American would likewise act upon an Englishman, for great cures soon occurred, and the land of our forefathers applauded to the echo this great boon. Other countries of Europe experienced the influence of the reform, and especially did it meet with success in Denmark. Large numbers of cures were published daily; pains were removed, as if by magic, as the tractors were passed; swellings visibly went down, tumors disappeared, the lame walked, the blind saw, and miracles seemed about to be revived. Dr. Worthington Hooker, of New Haven, a townsman of Dr. Perkins, to whose interesting history, I am indebted for this sketch, declares that he has now in his library a volume of two hundred printed pages, containing the records of great numbers of undoubted cures.

Meanwhile Dr. Perkins sold thousands of tractors at five guineas a pair, and even medical men used and endorsed them. The nobility of England, anxious to benefit the poor by disseminating the great blessing, seized upon it with avidity, and at once established a large infirmary. This was founded with all the pomp and circumstance

which characterises inaugurations by our transatlantic brethren, and was under the patronage of the first men of the land. Lord Rivers was president of the board of governors, and a long list of titled names followed his, as vice-presidents. I have not mentioned to you, because I thought it needless to do so, that in all this, the ladies were most enthusiastic, for in what great work are they not foremost? The constitution of the infirmary, in acknowledging this fact, provided that ladies should have the right to vote by proxy. In March, 1802, the number of cures, computed as effected by the tractors, amounted to one million five hundred thousand. Well was the fortunate Dr. Perkins sustained in the language with which he closed his report, "It is believed that no medical remedy, yet discovered, has been supported by so many well authenticated and important cures, performed in so short a time."

In spite of all the evidence adduced, there were sceptics in the land, (but alas, gentlemen, where do we not find sceptics?) who declared that all this was the effect of the imagination, and one Dr. Haygarth, making a pair of tractors of wood, which he painted to resemble those of Perkins, really did produce the same results, curious as it may appear. But these sceptics were soon put to confusion, and "Perkinism," as the discovery was called, marched in triumph through the world, and the "Perkinean Institute," under the skillful management of the philanthropic Lord Rivers and the noble vice-presidents, became a blessing to suffering humanity. All this occurred, and was fully reported in 1802; we now live sixty-two years after that time. Where now is Perkinism, and the Perkinean Institute, and Perkins' tractors? History is silent, and when you ask society, it hangs its head and blushes slightly at its own credulity. Do you doubt that recoveries occurred under this system? I do not for a moment; for how could Lord Rivers, and the titled vice-presidents, and the clergymen who gave certificates, and the ladies who voted by proxy, all have been deluded? They were not deluded, gentlemen, they merely called recoveries, cures; that was all.

From the days of Hippocrates down to the present, abundant recognition of the value of water in the cure of disease, may everywhere in medical literature be found. It was, however, only regarded as a means of cure, no one pretending to view it as a system, till the beginning of this century, when the idea of so doing occurred to the untutored mind of a Silesian peasant, named Vincent Priessnitz. Discarding the knowledge, gained by two thousand years of patient medical research, putting at naught the authority of all the physicians of the world, this bold innovator reduced the entire field of therapeutics to the use of water. He

maintained that, let the nature of the affection be what it might, it could be readily cured by water, which was the only means to be employed. Were the story, as thus far told, new, you would at once conclude that the poor fellow was consigned to some well-regulated asylum, where his mind might be restored to health. But this was not done: his doctrine found hundreds of thousands of believers all over the civilized world; volume after volume was written upon it, and in a short time the wisest and best men of this country and of Europe, were splashing in every conceivable kind of bath, with all the confidence which would have possessed one who entered of old the pool of Bethesda. Upwards of two hundred institutions for the treatment of diseases on this plan were established in different parts of the world, and many of these still exist; but time, the great adjuster of human affairs, has well nigh robbed the system of its livery of charlatanism, and many physicians avail themselves of these well-regulated hygienic establishments, as one means of curing disease. Thus "Hydro-pathy" has been brought to the occupancy of the position which it has held in all ages, and we have to thank Vincent Priessnitz for doing much to systematise and utilize it. That thousands of recoveries took place under it, when practised to the exclusion of all medication, and that some cures were affected by it, no candid mind can doubt.

Some years ago, there arose in this country a medical sect, owing its origin to an illiterate, though shrewd man, which, for a time, had many adherents, in all portions of the land, and promised, as the multitude thought, to supplant the necessity of educated physicians, by so simplifying the entire matter, that any one could practise with success. From the name of its founder, (Thompson,) this system received the name of "Thompsonianism," or "Thompsonism;" and, from the fact of its discarding all mineral medicines, it was likewise called the "Botanical Practice." In the opinion of Dr. Thompson, all diseases were due to a check of perspiration, and the only method of curing them, was their expulsion through the skin. To accomplish this, he relied almost entirely upon vapor baths, lobelia, and capsicum. At the time that this doctrine was promulgated, I resided in the southern portion of this country, and well do I remember the furor which it created. Whole communities were converted to it; men who refused to give credence to it, were regarded as prejudiced, or besotted by the old practice, and many prominent citizens, who had hundreds of beings dependent on them for guidance, absolutely discharged their physicians, under the absurd belief, that they would be able to take charge of the sick, and perform the functions of the most difficult of professions, without

knowledge or experience. This was not done by the half-educated or ignorant, but by refined and intelligent gentlemen, men who would have ridiculed a like infatuation on any other subject. Many of my own friends yielded to the influences which surrounded them, and were swept into the vortex of this barefaced imposture. Among them, I saw a great many cases treated, and I remember well, that I saw a great many recoveries. Indeed, in vigorous persons, the success of the plan was by no means contemptible; it was only in the very young and aged, that it appeared particularly fatal. Scarce half a century has passed since the inauguration of Thompsonianism, and now all that we see of it, is an occasional relic in some small country village—scattered and insignificant relics, which, though like those of the mastodon, they remind us of the great body of which they formed a part, will never, like them, serve as material for its reconstruction.

An example of a still more wonderful popular delusion than any of those mentioned, and a good demonstration of the tendency of diseases to recovery, presents itself in a system which has not yet lived its allotted time, but which is fast approaching the terminus of its existence. I allude to "Homœopathy," which was inaugurated by Samuel Hahnemann, a native of Messein, in Germany, about the commencement of this century. This most extraordinary man pretended to an especial illumination as to a law which governed the cure of all diseases, and openly declared his belief, that his discovery would revolutionize the mistaken notions which had existed since the birth of Christ. You are aware that his system rests upon the pretended fact, that diseases are cured by like morbid states, which he proposed to develop, in the economy, by the administration of drugs, infinitessimally divided. A curious feature of this most remarkable doctrine was the administration, in infinitesimal doses, of substances of which we take a large amount every day, as food. For example, to a man eating, daily, whole grains of animal charcoal on his roast beef, and vegetable charcoal on his toasted bread, he would administer less than the ten-thousandth part of a grain, with the hope that this, "potentised," as he expressed it, by being rubbed in a mortar, would be more powerful than the number of grains eaten as food.

In reference to the law, let me remark, that the discovery of that or any other law, which would relieve our noble art from its present uncertainties, and put it on a level with the exact sciences, would be hailed with joy by every one of its followers. The very millennium of medicine would have arrived, and the honest and sincere physicians of the whole world would hasten to bow down in homage before the heaven-sent messenger. Had the discovery of Perkins,

or Priessnitz, or Thompson, or Hahnemann, been true—had they been able to stand the test of experiment; it would have carried joy to the breast of every votary of the healing art, and each would have shouted “Eureka,” as he embraced it. “But, alas! gentlemen, the long-sought law is not yet found; it may be to-morrow, but it is not to-day; and, worse still, we have, so far, no evidence whatever that such law exists.

This is a digression: let us return. Hahnemann, in pursuance of the doctrine already enunciated, divided the drugs, which he employed, into the smallest imaginable particles, and gave great powers to these, by agitation and trituration with alcohol or sugar. Let me inform you how the homœopathic dilutions are arrived at, and then make some computations, with the intent of conveying to your minds a correct idea of the amount of medicine which they will each contain. One drop of a pure tincture (say, for instance, tincture of opium, called laudanum,) is added to one hundred drops of alcohol, to make the first dilution; one drop of this (which contains one-hundredth of the original drop) is added to one hundred drops of alcohol, to make the second; one drop of this is added to one hundred drops of alcohol to make the third, and so on to the thirtieth, and even the three thousandth, which has been employed by many homœopaths. It is evident to you, that knowing this, we can easily calculate the strength of each dilution.

By the same process, drugs are triturated with sugar, and divided into pellets of a given size. In the *Organon*, (the text book of homœopathy,) Hahnemann says, at page 289: “It holds good, and will continue to hold good, as a homœopathic therapeutic maxim, not to be refuted by any experience in the world, that the best dose of the properly selected remedy, is always the very smallest one, in one of the high dynamisations, (the thirtieth dilution,) as well for acute as chronic diseases.” Now, let us suppose one grain of camphor divided into pellets of the thirtieth dilution; each pellet will consist of a mass of sugar, with the decillionth of a grain of camphor added to it. An entire grain of camphor is about the size of the head of a large pin, and this mass it is which is divided into decillionths. Suppose now that these pellets were arranged side by side, so as to make a straight line—that line would extend from earth to a point considerably beyond the moon. Yet Hahnemann declared that each of these pellets would contain enough of the original grain of camphor, not only to affect the system, but, in time, to produce a disease in it.

The population of the earth is generally stated as being nine hundred millions: for convenience, we will call it one thousand millions. It is evident that the grain of camphor, the size of a pin's head,

divided into billionths even, would give a great number of doses to every person on the globe, for a billion is a million millions, and this number of doses is to be divided among only one thousand millions. If this is true of the billionth of a grain, what must it be of the decillionth, which is thus reached in arithmetical computation : first we have a million, then a billion, then a trillion, then a quadrillion, quintillion, sextillion, septillion, octillion, nonillion, and then a decillion, which was Hahnemann's favorite dose. It is evident that to reduce this grain to decillionths, it would require a large mass of sugar. This has never been accurately computed for the decillionth, that I know of ; but it has for a quintillionth, which is an infinitely smaller dilution, and for this, it would require for the grain, the size of a pin's head, sixty-one globes of sugar, each equal in size to the earth.

When these facts are brought to the notice of homœopathists, many of them at once declare that they do not regard Hahnemann as correct, in believing in the high dilutions ; and the sect has, I believe, divided itself into low dilutionists, or those who, in spite of their apostle, use the tenth and twelfth dilutions, and the high dilutionists, or those who go as high as the three thousandth. Now, those who pretend to use the large doses of homœopathy, are scarcely in a more tenable position than their brethren ; for it has been clearly proven, by careful calculation, that the strength of the tenth dilution is equal to one drop of any tincture (say laudanum) dissolved in a mass of fluid five hundred times greater than the lake of Geneva. The eleventh dilution would require a mass of water greater than the Mediterranean sea, for one drop of laudanum, of which the common dose is twenty-five drops ; and the twelfth could scarcely be accomplished in a sea extending over the surface of the whole earth, and five hundred fathoms deep.

You smiled, a while ago, at the belief in Perkins' tractors ; you ridicule the belief in clairvoyants and fortune-tellers ; and yet do they compare with the belief in all this ? Now, with these facts, there are but two ways to deal : first, to deny their being facts ; or secondly, to agree that they prove the system preposterous. I do not know what part of the statements you can doubt ; they are those collected by Prof. Simpson, of Edinburgh, after careful research, and, like all mathematical deductions, they are simply undeniable. If I place ten apples before you, and add ten to them, you cannot, if so disposed, deny the resultant being twenty, for it is a mathematical fact, not a matter of opinion. So with the statements here made ; they are all open to examination, and all susceptible of mathematical proof, however astounding they may appear.

This, then, is the system which a man, not in an asylum for the

insane, dared to offer to the world; this is the doctrine which thousands of the wisest in the world accepted as a boon from heaven, and this the therapeutic procedure which has undoubtedly witnessed the recovery of thousands of persons, sick with grave disorders, aye, even with disorders pronounced incurable by members of the profession of medicine. Did it cure its infatuated votaries? Far from it; but it allowed nature to do so. Some lives it has unquestionably saved, by occupying the therapeutic field, and preventing dangerous medication; many it has undoubtedly destroyed, by keeping from the bedside the true physician, who might have wrested the sufferer from the hand of the destroying angel, by a proper use of those drugs with which the Almighty has endowed our art.

I trust that the tenor of this discourse will bear me out in the assertion, that I am not citing these systems of charlatanism for the purpose of railing at or inveighing against them. Far from this: I regard such systems as among the many evils inherent to society, and which cannot be expunged, because they are absolute necessities. They constitute a supply, meeting a demand felt by a portion of every community. So long as the minds and educations of men remain as at present organized, so long will there be those who crave quackery and deception, not only in medicine, but in religion, philosophy, and every other sphere of human thought. I merely use them to corroborate my position, that the secret of their success consists in the tendency of diseases to recovery, and their appropriation of the credit which is nature's due with reference to the result.

It is almost incredible what unwarrantable interference with diseases has been engendered by a neglect of the study of their natural tendencies and courses. So marked has this been, that it has built up systems of quackery as havens of refuge from the "nimia diligentia" of sincere but misguided physicians.

Let me recall to you a notable example of such interference to which I have already alluded. In 1536, Ambrose Paré, then an unknown youth of nineteen, was appointed by Francis I., of France, a surgeon in his army. Anxious to learn, he gave strict attention to the work of experienced and eminent surgeons, and saw them always pour into the fresh wounds occurring in battle, boiling oil. One evening he had under his care a number of wounded, and into their lacerated bodies diligently poured the seething pitch, till all was used. Then his mind was much disquieted, for a number of wounds remained, into which no boiling oil had been poured. The next day, to his surprise, he found that the poor neglected fellows had done better than their more fortunate, but scalded neighbors.

Instantly the genius of the man seized upon an accidental discovery, and by his efforts he abolished the practice in future. Now, the surgeons, who had for years used boiling oil in this way, were sincere, but certainly mistaken men; and their mistake arose from not finding out how wounds behaved when let alone. Chance taught this to Paré, and hence an improvement in his art. You may suppose that a parallel drawn between this occurrence, and any of those now taking place, would be exaggerated; but it would not. There are hundreds of sincere practitioners to-day, who are, in my judgment, pouring boiling oil into wounds, which, if watched as Paré watched them, would be found to do better without it.

Let me more clearly lay the matter before you by reference to some experiments, to which many of you were witnesses during the past winter. I have been in the habit in clinical teaching (as many others have done in different parts of the world), of leaving a certain number of cases, which I felt that I could conscientiously allow to progress without interference, to run their courses, that the students might appreciate how much nature could do in effecting a cure. I shall not now weary you by particulars, but merely give you the gross results to which such experiments lead.

If fifty cases of pleurisy (the disease for which Sydenham prescribed so vigorously) be placed in bed, carefully nursed, dieted, guarded from deleterious influences, and receive not a particle of medicine of any kind, the probabilities are that not one case would end fatally; all would likely recover, unless some peculiarity of constitution, the unfavorable age of the person, or accidental complication should alter the result.

The ancients supposed that inflammations of the heart, pericarditis and endocarditis, would always prove fatal, unless checked by treatment; we know by experiment that this is a mistake; both diseases are in the vast majority of cases recovered from, leaving the heart more or less crippled, it is true, but still not destroying life as primary acute attacks. Pericarditis will, as a very general rule, run its course, and eventuate in recovery, without any resort to medication; and endocarditis so often does so, that its existence is commonly not recognized at all; the only evidence of its ever having existed being found in its effects on the valves of the heart.

Tonsillitis, or quinsy, is a fearful disease to watch through its course; for when at its height, it appears to the looker on, that death by strangulation or starvation must soon put an end to the patient's suffering. The sufferer struggles for breath, gasps wildly, and swallowing is often for days a matter of utter impossibility. For this affection, in time gone by, the lancet, and other equally active means, were always resorted to; and what wonder when we

look at the results of the plan ; all the cases thus treated recovered. So did all the wounds into which Paré poured boiling oil, and mark the parallel further ; when Paré omitted the oil, still the wounds got well, and I assure you with reference to the worst cases of tonsillitis, that if they be left without medicine, none of them (unless in some exceptional case, as of an old or very weak person,) would end fatally. They look as if they would die, but they do not do so ; they recover.

Scarlet fever of simple form, measles, and even varioloid, in the vast majority of cases, will end in recovery without the slightest medication.

But of all diseases which excite terror in the minds of bystanders, none does so more markedly than convulsions in children. Of course, the dangers will generally depend upon the cause of the seizure ; but, even in this dreaded disorder, the majority will recover, even if no interference be practised. Another disease, worth instancing in this connection, is cholera morbus ; a pathological series made up of a succession of efforts, on the part of offended nature, to free itself from disorder. In this effort nature generally, nay, we may almost say always, succeeds in effecting a cure, unless in the extremes of age, or in a very debilitated patient.

You all know what dreaded scourges exist in typhus and typhoid fevers. The vacant seats at thousands of hearths throughout our land stand solemn witnesses to their ravages. Read in the literature of the past the list of remedies at various times regarded as specifics for these fevers, and you will wonder at its length. Were I to write the drugs advised during the last century in their management, upon the walls before me, space would be wanting to accommodate their names. Within the last year, the commissioners of public charities in this city, advised of the fact that pure air and nourishment are the appropriate remedies for these affections, and assured by the physicians of Bellevue Hospital, that they will prove more amenable to this treatment than to any amount or kind of dosing, have placed all such cases upon an island in the middle of the East River, where they are lodged in pavilions, which admit of the most perfect ventilation. The experiment has been tried under the judicious care of Dr. A. L. Loomis, of this city, and to show you its results, I read a statement received from him in reference to it. "I have had charge of the typhus fever cases," says Dr. Loomis, "for five months ; during this time not a particle of medicine and no stimulants have been employed, and the results have been one death in every sixteen and two-third cases ; while, as you are aware, the per centage under the old plan was one in six. Dr. Murchison, a late English writer, states them in England as

one in five." These facts are certainly most astonishing, yet here they stand in bold relief as facts, presenting themselves so prominently that he who runs *must* read.

But why prolong the list? The tendency of the vast majority of diseases is to recovery, and not to death. A few, (as, for example, cancer, consumption, Bright's disease, hydrophobia, and cerebral affections,) show no such benign tendency; but what rational and unprejudiced physician of to-day will pretend, that there are any medicines which accomplish in these affections one-half of what is effected by air, exercise, diet, and rest?

These are only the gross results obtained by the study of the natural phenomena of diseases; there are many others which will be noted; and when, guided by the knowledge thus gained, we resort to medicines in similar conditions, we will be able to appreciate their results, by the comparison of the duration and progress of aided and unaided cases.

Without such knowledge, we are often blinded by our own efforts; and employing the two common reasoning of "*post hoc, ergo propter hoc*," attribute to them credit, which is not their due. I remember some years ago a report being made to the Imperial Academy of France by a sincere and industrious member, who had, for a length of time, been using a remedy with great success in a certain disease. After reading a number of carefully noted cases, he came to the conclusion that by the proposed treatment, the disease could be cured in sixteen days. The essay was much commented upon, and a committee appointed to investigate the matter. At a subsequent meeting its chairman reported, that the remedy had been fully tested; a number of cases had been treated by the proposed plan, and an equal number left without any treatment. Those subjected to the treatment had, as the truthful member had related, recovered in sixteen days, but those left to nature had all recovered in fifteen.

Have we not in these facts the true explanation of the harmony of result between modes of practice utterly opposed to each other? of those of Sydenham, and the physicians of to-day, of Bouillaud and Todd, and of the wonderful results of Perkinism, Thompsonianism; Hydropathy, and Homœopathy? These plans differed most widely, and yet the results were the same; the diseases got well, some in spite of the treatment, some uninfluenced by it on account of its inefficiency, and some by its help. To elucidate this matter, let us suppose a patient laboring under a severe attack of suppurative tonsillitis, or quinsy. The natural course of the affection is to pass through a period which entails great suffering, and then to pass off, generally by formation of abscess. Suppose

that Perkin's tractors were employed in the case; it would pass steadily through its period of suffering and apparent danger, and in due time the patient would recover. Could we blame him, in his ignorance of what nature effects in this disease, in believing the tractors a great remedy for quinsy?

Or, perchance, the honor was not destined for Perkinism, and that the patient pins his faith to the view that heaven intended that all man's ills should be cured by water; he is wrapped, and douched, and splashed, and showered; and still the inevitable abscess breaks, and still recovery occurs.

Or a follower of Thompson is called in: the sufferer is nearly liquified with vapor baths, and dosed with lobelia; in spite of which nature resists the attack, and he is saved.

But perhaps the patient's lines have fallen in pleasant places—perhaps he is under the gentle sway of a follower of Hahnemann. His kind attendant, actuated by the purest motives, pours one drop of the tincture of belladonna into New York bay, or Long Island sound, and gives the agonized sufferer one drop of the mixture. It is only a question of time; the abscess breaks, and the grateful patient thanks a beneficent Providence for the creation of Hahnemann, and the creation of so much water on the earth for the dilution of his medicines.

Thus, as all roads lead to Rome, so do all these modes of practice lead to recovery. The "*vis medicatrix naturæ*" has accomplished a great result, and the man who has watched its workings supposes the result all due to him, as did the fly who sat upon the whirling chariot, crediting himself with all the noise and dust which it excited.

From what I have said, thus far, you may charge me with want of confidence in the power and utility of drugs, and the propriety of interference with disease. In this you greatly misconceive me. I have mentioned a number of diseases which, left to nature, will generally be recovered from, but I do not advise you to use no medicines in these cases; I tell you that nature, without medicines, cures them, and that if medicines do not produce absolute and palpable good results, they had better not be given. I go further than this, and recommend you, when a disease is progressing favorably, to let it alone. But if by drugs, or any other means, you can soothe pain, ward off complications, cut short the natural duration of the malady, or prevent disagreeable sequelæ, employ them in large and decided doses.

All these ends I am convinced they accomplish to a certain extent; nay, more, you will sometimes see the well-directed prescription snatch your patient from impending death, calm the racking

agony of mind as well as body, and cause a promising future to dawn upon a gloomy present.

This is my belief in drugs rightly used; but mark me, gentlemen, the idea that a physician is sent for to give medicines is a grievous error, which even now affects society, and works great evil. Some of my most difficult daily tasks are preventing patients from dosing themselves. The duty of our high calling is to prevent and cure disease—not to dole out medicines. A patient comes to you with palpitation of the heart, and you tell him to desist from the abuse of tobacco; another with an irritable stomach, and you restrict him in the use of alcohol; another with dyspepsia, and you advise the removal of decayed teeth and the introduction of artificial ones; another with persistent headache, and you advise him to sleep in fresh air instead of foul; another with intestinal disorders, and you recommend his desisting from the constant use of medicines which are injuring him; a pale young lady presents herself in cadaverous beauty, and you order animal food of which she takes none, exercise which she has neglected, and a diminution in the amount of green tea that she is in the habit of drinking; a mother brings a restless, sleepless, aggravating baby, of which she has made a miniature De Quincey, and you advise a supply of proper nourishment to the starveling; are you not performing a higher duty than drugging them, and would you not be more successful?

Far be it from me to advise you not to interfere with disease; it would be to forswear my profession, for it is for successful interference with it that the physician is created. I do not urge you to abjure the use of drugs when good can be effected by them, but I do urge you, and that fearlessly and strongly, against the polypharmacy, the everlasting, pitiless dosing which has built up systems of quackery, and caused them to flourish at the expense of the lives of the community, because they became havens of refuge from therapeutic persecution. Can you not appreciate a poor sufferer's flying to a charlatan, rather than have the orthodox Paré pour boiling oil into his wound, and can you not conceive of one, even a wise man, claspng the knees of Hahnemann, and praying him to protect his helpless pleurisy from the lancet and linctus, and blister, and liniment, and morning draught and evening draught of the accomplished and learned Sydenham? Look around you at the systems of charlatanism now existing, and you will see that in their ranks is not to be found one name which has ever been whispered by fame; not one known by faintest report to science, and this is not only so at our day, it has been so in all time, for talent rarely consents to prostitute itself to deception. Where, then, are we to seek with success for the real supporters of these false doctrines? In the

regular profession. Hahnemann was the offspring, not of science, not of truth, but of the practice of Sydenham.

That many of the charlatans of all ages have been sincere men, I do not doubt; it is folly to call them all knaves. They are often more deluded than their patients, firmer believers than those whom they mislead. Ignorant of the course of disease, when left to nature's management, and of the recuperative powers of the system, they are deceived in their conclusions as to the results effected by the means which they employ. Dr. Hooker entertains no doubt that Perkins believed in the truth of his system, and I have as little that Hahnemann was thus deluded; but was the great Sydenham less so in concluding that by bleeding, blistering, cupping, leeching, and salivating, he cured diseases which experience teaches us run their courses to recovery, when left alone?

Again, you may say, "If all systems lead to recovery, how does it really matter to which of them one intrusts himself?"

I reply, that in the majority of diseases the patient will recover, unless in the hands of an Indian Thug himself; but is recovery all that is desired? A case of acute rheumatism, treated by the most inefficient means, will recover probably in six weeks, for that is the natural duration of the disease; but would it not be to the sufferer's interest and comfort to have the period of torture diminished one-half, to avoid the severe pain and risk of death attendant upon these attacks, and to rise from his bed saved from heart disease, the so frequent sequel of the affection?

He who shoots the foaming rapids under the guidance of a pilot who forever teazes the rudder is in great danger: would he be in less, to pass the perilous spot *without* a rudder, leaving the ship to the course of the current? No; either plan would be fraught with dangers, which would be avoided by a careful hand, that touched, even strained the rudder when needful, but trusted to the current's course when it swept him in the right direction.

A short time since Dr. W. A. Hammond, late Surgeon-General of the army of the United States, issued an order prohibiting the use of calomel and antimony by the surgeons in its employ. What a commentary was this on the use of these drugs at our day! Do you suppose that a man of Dr. Hammond's capacity and experience, regarded calomel and antimony as useless or injurious agencies? No; he accorded, I am sure, great remedial virtues to each of them; but the logical mind of the man led him to weigh the good which they *could*, with the injury that they *did* accomplish, and having no means by which to prevent his subordinates from their abuse, he suppressed them, preferring that their advantages should be lost

rather than that those intrusted to his care should suffer from the great evils which they might inflict.

In the midst of so much doubt and diversity of opinion, where shall the rational physician of to-day stand, untrammelled by the prejudices of a bygone age, and stimulated to investigation and progress by the great medical discoveries of the last half century? For him there is a vantage ground between the two extremes, neither verging towards meddlesome interference on the one hand, nor imbecile neglect on the other. Familiarized with the true nature of diseases, and recognizing fully his own power, and, what is equally important, his own weakness, he will approach his duties with the knowledge most likely to aid him in the relief of suffering humanity.

Such knowledge always begets power. Armed by this, and discarding all mystery, all deception, both of himself and others, he may, at some time, crown the efforts of a well-spent life, by the proud satisfaction, the undying glory, of increasing the resources of his God-like art.—[*Monograph from the Author.*]

3. *Influence of Uterine Displacements on the Sterile Condition.*

Dr. J. Marion Sims, at the late meeting of the British Medical Association, said that we were all interested in the subject of sterility, when we remember the fact that every eighth marriage was sterile. He did not propose then to give us a complete paper on the subject, but only to present it in one of its relations—viz., that of its dependence upon misplacements of the uterus. He divided his sterile patients into two classes: 1st. Those who were married a sufficient length of time and did not conceive; 2d. Those who had borne children, but for some reason ceased to do so long before the termination of the child-bearing period. The first he called “natural sterility,” the second, “acquired sterility.”

To show the frequency of uterine displacements in this relation, he said, that of two hundred and fifty cases of “natural sterility” that had fallen under his observation, one hundred and three had anteversion, and sixty-eight retroversion; and of two hundred and fifty-five cases of “acquired sterility,” sixty-one had anteversion, and one hundred and eleven retroversion, the anteversions predominating in the first class, the retroversions in the second, the two opposite displacements being almost in inverse proportion in the two classes and forming about two-thirds of the whole number, being three hundred and forty-three out of five hundred and five cases; which proved beyond question the bearing and importance of these displacements, in connection with the sterile condition. He then

illustrated by diagrams the normal position and relations of the uterus, explained the various causes and complications of anteversion, whether dependent upon fibroid tumors, elongation of the infra or supra-vaginal cervix, shortening of the utero-sacral ligaments, or hypertrophy of the fundus. In all these cases, he said, we could not do much for the relief of the sterile condition by merely mechanical means; that our efforts should be directed to seeing that the os tincæ was properly open, that the canal of the cervix was free from engorgement, and that the secretions, both vaginal and cervical, were not poisonous to the spermatozoa. He said that there was one form of anteversion, that was easily cured by a simple and novel operation, which he originated some eight or nine years ago. He illustrated this by cases and diagrams. It was as follows: The uterus lies down on the anterior wall of the vagina, and parallel with it. The fundus is most usually the seat of a fibroid growth anteriorly. The anterior wall of the vagina is greatly elongated, the os tincæ pointing directly backwards. Under these circumstances, he has shortened the anterior wall of the vagina an inch and a half, by denuding the surface a half inch wide and two inches long, across the axis of the vagina, in juxtaposition with the cervix uteri, and making a similar transverse scarification parallel with the first, about an inch and a half, more or less, anteriorly to it, and then united these two transverse cut surfaces by silver sutures, just as we would unite the edges of a transverse vesico-vaginal fistula by them. This necessarily shortens the elongated anterior wall of the vagina, draws the cervix forwards into its normal relations, and, as a consequence, elevates the fundus. He related several successful cases of this operation, and had seen it followed by conception and child-bearing. He then passed to the consideration of retroversion as influencing the sterile condition, pointed out its varieties and anomalies, and showed how it was to be diagnosed and how replaced. By diagrams, he illustrated various modes of reduction, showed how conception was difficult, and sometimes impossible, in some forms of retroversion, advocated mechanical treatment, pointed out the danger of pessaries, but advocated their use, when judiciously applied under proper circumstances. He prefers a malleable ring, either of block tin or a ring of copper wire covered with gutta purcha, and then bent or curved to the proper diameters of the vagina of each patient. He said this was a modification of Hodge's pessary. Under some circumstances he also uses Meigs' ring pessary, made of watch-spring covered with gutta percha. He pointed out the peculiar advantages of each of these, and paid a just tribute to his countrymen, Drs. Hodge and Meigs, who were the earliest advocates of the mechanical treatment of uterine dis-

placements. He said that the great secret of treating the sterile condition, when dependent upon retroversion, was to adjust a malleable ring which would hold the uterus in its normal position, and which was to be worn always during the act of coition. He explained its philosophy, its safety, and its harmlessness, and related a great many cases in which its use has been followed by conception—one after a sterile marriage of six years, another of ten years, another of fifteen years, and others at various periods of time after sterile marriages. He also showed how miscarriages, often dependent upon this displacement, are prevented by the use of a properly fitted malleable pessary. He then pointed out the course to be adopted when it was impossible for the patient to wear a pessary, showing why it was so, and what was to be done.

[*Medical Times and Gazette.*

4. *Gunshot Wound of the Chest Treated by Hermetically Sealing.*
Reported by P. F. BROWNE, M. D., Surgeon in Charge First
Division Chimborazo Hospital.

Private J. W. Branson, company "C," Ninth Virginia cavalry, was wounded July 29th, 1864, by a Minie ball, which entered the right side of the chest, about three inches below the axilla, traversed the right lung, and was removed by counter incision near the spinal column on a level with the orifice of entrance.

There was bleeding from the lung at the time the wound was received. He was brought directly from the field to the hospital, and in less than twenty-four hours after the wound was received. He was a strong, athletic man, about twenty-seven years of age. It was decided, as the wound had been so recently received, and his condition every way favorable, to treat the case by hermetically sealing the wound. The orifice of entrance was carefully closed by means of thin layers of cotton, saturated with collodion; these were renewed as often as found necessary, to prevent introduction of air in the chest—in a word, the wound was kept hermetically sealed. The case progressed favorably, attended by only slight circumscribed inflammation of the lung, some effusion in the pleural cavity, and a little fever. These were so slight as to require but little treatment. The patient, at the time of his reception, and for several weeks afterwards, complained of great soreness of both sides of the chest—more of the left than the right; this soreness was increased by the slightest pressure. He attributed, and I think justly, this soreness to a severe fall from his horse at the time he was wounded. Under appropriate treatment and rest, the soreness gradually sub-

sided, and the patient, when fairly convalescent and walking about the ward, was furloughed, and left in a carriage for his home in Westmoreland county, Virginia, with every reason to expect a speedy and perfect recovery.

How far the favorable result in this case is attributable to the treatment pursued, I will not undertake to decide. I report the case to accumulate facts, on which fair and safe deductions may hereafter be drawn of the success of treating gun-shot wounds of the chest by "hermetically sealing."—*C. S. Med. & Sur. Journal*.

CLINICAL LECTURES.

1. *Clinical Remarks on Gun-shot Wounds of Joints, delivered January 10, 1866, at Howard's Grove Hospital.* By HUNTER McGUIRE, M. D., Professor of Surgery Va. Medical College.

[CONCLUDED.]

We are taught, both by experience and reason, that gun-shot wounds of the knee-joint, are more serious than those of any other articulation, and that the danger is greatly increased when the ends of the bones also are injured. In the case before us, the ball has entered the joint, and fractured the patella and articulating extremity of the femur. In the early part of the late war, attempts were repeatedly made to cure, without surgical operation, the limbs of soldiers wounded in this way, but, as far as I could learn, these attempts were all unsuccessful, and terminated either in the death of the patient or secondary amputation. Guthrie, McLeod, Larry, Esmarch, and others, state, as the result of their experience, that such wounds invariably demand amputation. Gun-shot wounds fracturing the patella, but not otherwise implicating the joint, are exceedingly dangerous injuries, but form an exception to this general rule. As Medical Director of a large army, and one more actively engaged, probably, than any similar force in the late Confederacy, I saw a large number of these cases of wounds of the knee, involving the extremity of the bones, but not one which recovered without amputation. Whenever the surgeon persisted in his effort to save the limb, the patient died. Shock and traumatic fever, assisted occasionally by hæmorrhage, sometimes carried the patient off in two or three days; but generally he lived for four or five weeks, or

even longer, and then large abscesses, limited only here and there by fibrinous deposits, having formed about the joint, with the matter burrowing in all directions, he died from pyæmia and exhaustion. I do not pretend to assert that patients thus wounded never get well without surgical interference ; I only state that I have never seen one. Surgeons have shown me cases, (which they believed to be of this class,) where recovery took place with ankylosis of the joint, and others which got well without even this deformity ; but, upon careful examination and inquiry, I have always been led to believe that in some of the cases no injury had been done to the articular extremity of the bones, and that in other cases the joint itself had not been opened.

I met upon the street, a day or two ago, Captain Calloway, formerly aid-de-camp to General Early, who is supposed to have suffered from a wound of this kind. If he did, he has entirely recovered, for he walks without the slightest lameness. He says the bullet struck him upon the knee-cap, and came out in the ham, and the scars plainly mark the points of entrance and exit of the ball. He kept the joint quiet, and applied cold water to it constantly. The knee became swollen soon after the injury, but the wound never discharged matter abundantly. The cure was tedious ; but after a few days the improvement was uninterrupted. In this case, I think the bullet was deflected, and passed around the joint, and the swelling was due to synovitis following the concussion. The following case will prove that this can happen : A poor fellow, who had recovered from a wound which was said to have passed through the patella and knee-joint, was again shot in this same limb, and underwent amputation of the thigh. I dissected the knee, and found that the old wound was not through the joint, but that the ball had glanced and passed around it.

That-gun shot wounds of this kind may get well in civil practice, when the patient has every comfort and attention, and has not been subjected to the hardships and depressing influences of a soldier's life, I have no doubt ; indeed, it is possible that a recovery may, now and then, happen in the army ; but I believed, while serving in the field, that it was unfortunate, surgeons supposed it ever occurred, for the idea induced them, sometimes, to make the attempt of saving the limb, and thereby they generally sacrificed the patient's life. To an inexperienced person, gun-shot wounds of the knee may not appear very serious, when first examined. The opening in the skin, by the resiliency of the tissue, may have contracted to less than half the size of the ball which made it : the joint may not be swollen, and only a drop or two of blood is trickling from the wound ; the limb, perhaps, is not at all out of " drawing,"

and the idea of amputation is horrible, to an unprofessional or inexperienced observer. General Ewell's leg, after he was shot at the second Manassas, presented this appearance. He was kneeling on the ground, and looking under some pine bushes to get a better view of the field, when he was hit upon the left patella, nearly in the centre of it, and his leg being flexed, the ball passed downwards, striking the head of the tibia, and splitting it into several fragments. The bullet finally lodged in the muscles of the calf of the leg. He sent for me at once, but the messenger failed to find me, and I did not know he was hurt, until General Jackson sent his aid-de-camp to tell me. He was still laboring under severe shock of injury when I found him, although several hours had elapsed. In all gun-shot wounds of the knee, shock of injury is severe, but it was especially great in this instance. The General's health, naturally not very good, was unusually bad at this time. He had also lost a great deal of sleep, and the night he was hurt, was compelled to drink a large quantity of strong tea to keep awake. Tuesday night his troops were engaged at Bristoe Station, and all day Wednesday they were fighting the advance of Gen. Pope's army. The whole of that night was occupied in marching to rejoin the main body. Thursday they were fighting, marching and counter-marching all day, and late that night, during a heavy engagement, the General was wounded. He was so much exhausted when he was shot, that his surgeons thought at one time he would die from the shock of injury. When he had sufficiently recovered from this, I advised him to submit to amputation, but he consented to it very reluctantly, partly because some surgeon had assured him that his wound was not dangerous, but one from which he would soon recover. I amputated the thigh just above the knee, performing the operation as rapidly, and with as little loss of blood, as I could. About ten days after the amputation, to escape capture, he was carried on a litter by some soldiers, nearly fifty miles. The motion of the litter caused the bone to protrude, and in consequence of this and his bad health, the wound sloughed. After much suffering and the loss of an inch of the bone, he got well enough to go about, when one day he was so unlucky as to let his crutches slip from under him, and falling upon an icy pavement, he re-opened the wound and knocked off another piece of the bone. After some months he was well enough to come back to the field again, when he performed, you know, some very active service, but from the shape of the stump and the ill-contrived wooden leg he wore, he was frequently troubled with abrasions of the skin, small abscesses, and so on. He uses now a suitable artificial limb, and, with the assistance of a cane, gets along right well, no longer liable to affections of the stump.

But you naturally ask, what about excision of the knee-joint for such injuries? The operation at this articulation was performed about one hundred years ago, but did not excite much interest in the profession until 1850, when it was introduced by Mr. Fergusson, of London. Since then many cases have been reported, with a mortality, according to the most reliable statistics, of 30.04 per cent. Compare this with the deaths following amputation of the thigh at the lower third, in military practice, which McCleod tells us are 56.6 per cent., and you are apt to decide in favor of excision; but the percentage of mortality following excision is taken from cases in which the operation was performed in consequence of disease or injuries occurring principally in civil practice. Of "six cases of excision for compound dislocations, incised wounds, etc., occurring in civil practice, two only ended in recovery; of two cases, also in civil practice, the wounds being from shot-guns, one was fatal from tetanus, and the other recovered after the expiration of three months."

Among all the cases which I can find reported, or have myself seen, in which this joint was excised for injuries received upon the field of battle, there is but one recovery. Only one instance of this operation is reported performed in the Crimea, and in this death occurred from exhaustion. A second case in India proved fatal from shock. Another in the Schleswig Holstein war, from pyæmia, and a fourth in which no details are given, also from pyæmia. In ten cases reported in circular from Surgeon-General's office, United States Army, one recovered.*

In May, 1864, at Spottsylvania Court-House, the operation was performed in six cases, by some surgeons sent from this city to our assistance. Not to subject them to the danger of transportation, I left these cases, with others too badly hurt to be moved, in a hospital, prepared for them near the field of battle, and in charge of one of the best surgeons in the army, Dr. Taylor, who gave them every possible attention. Three of them died before the end of the third day. In two of the cases, secondary amputation was performed, with a view of preserving life, but unsuccessfully, and

* In connection with this subject, and in view of the great distrust with which resections of the knee-joint are regarded, it may not be inappropriate to briefly present statistics, recently furnished (June 1864,) by Mr. Fergusson, Professor of Surgery in the Royal College of Surgeons, London.

Mr. Jones, of Jersey, performed this operation fifteen times, with one death; Mr. Fergusson forty times, with fifteen deaths; at Exeter Hospital, twelve operations with no deaths; Dr. Humphrey has operated thirteen times, with one death; at King's College there have been ten operations performed, with one death.

Mr. Price has collected the records of two hundred and fifty cases; the mortality in these is not greater than that which obtains in amputation through the lower third of the thigh. Many of these patients walked on crutches in six weeks, and some in three weeks after the operation.

Mr. Parke was the first to perform this operation in surgery; period, 1782.

This patient of Mr. Parke made several voyages to sea, in which he was able to go aloft with considerable agility, and to perform all the duties of a common seaman.

the sixth lingered for about four weeks, I think, and proved fatal from sheer exhaustion. Such, as far as I can gather, is the melancholy record, and although the number is too small to justify a comparison with amputation, I do not think there is any one who saw the six patients I have reported—men who a day or two before, were stout, strong and brave soldiers—who would not agree with me in saying, this operation for wounds occurring upon the battle-field is nothing more nor less than butchery.

Gun-shot wounds in the neighborhood of the knee are dangerous, and cause the surgeon much anxiety, because of the liability of the joints becoming secondarily involved by sloughing and ulceration. It is true, rare instances are seen, where gun-shot wounds heal by the "first intention," and others where no increase in the size of the wound is made by ulceration and sloughing, and the process of cure is carried on at once by granulation. Either one or the other of these modes, or probably both, is doubtless the case in the instances of recovery without deformity, which we see in cases where the ball has passed beneath the skin, around the joint; but, as a general rule, the tissues, for some distance around the track of the ball, are killed by the shock and condensation which the bullet makes, and being deprived of their vitality, are thrown off by sloughing or ulceration. The extent of this varies, of course, according to the size and velocity of the missile, and the character of the tissues, but it will vary also, according to the patient's general health, and the after treatment. I have seen a number of soldiers become permanently crippled with stiff knees, or even lose their lives, from wounds which extended through the skin, and cellular tissue covering the knee, and which afterwards sloughed and exposed the cavity of the joint. It will occur sometimes in spite of all you can do, but it may often be prevented by carefully enjoining rest, cleanliness and strict attention to the general health.

Gun-shot wounds involving the upper tibio-fibular articulation are also very dangerous, because the synovial membrane lining that joint is so frequently continuous with that of the knee. I saw a Colonel of artillery wounded at Fredericksburg in this joint, the ball afterwards lodging in the calf of the leg. He lost his life, just as patients do, who have been shot through the knee.

Mere concussion of the joint is often followed by violent and dangerous inflammation, and the treatment of such injuries should be carefully conducted. At the first Manassas an officer of the 4th Virginia Infantry, Lieut. Col. Moore, of Winchester, was struck upon the knee-cap by a ball, so nearly spent, that it simply penetrated the skin and bruised the patella. It was partly imbedded in the soft parts covering the bone, and was removed by the Colonel

himself. He was imprudent enough to use the limb a good deal immediately afterwards, when inflammation of the joint set in, which came near costing him his life. He got well after a tedious and painful illness, but with the knee permanently stiffened.

I have been led to be thus talkative to-day, because this is the first case of gun-shot wound of a joint I have had an opportunity of showing you. I fear I may have occupied too much of your time, but if the cases I have related prove interesting and instructive to you, the time will not have been spent unprofitably.

ORIGINAL CORRESPONDENCE.

PARIS, *January*, 1866.

I cannot furnish anything more interesting, than the following (translated) *Resumé* of a Memoir upon Cholera, recently read before the Academy of Sciences, by M. Baudumont.

In well-defined cholera, when the disease approaches the algid period, bleeding is impossible, and the blood which was required for this investigation could be obtained only by taking it from the ventricles of the heart. This blood is brownish-black, and in the form of a granular-like pulp, wholly dissimilar in appearance from ordinary clotted blood. In but one instance the serum separated itself closely from the other parts, which united as a clot. Simply dried, it gave the following results referred to unity :

		Dry Matter.	Water.
1.	Arterial blood, {	Serum.....	0.2127
		Clot.....	0.2320
	Venous blood, {	Serum and Clot.....	0.2207
		Serum.....	0.2520
		Clot.....	0.2523
	{	Serum and Clot.....	0.2523
			0.7477
2.	{	Arterial blood.....	0.2892
		Venous blood.....	0.2818
	{		0.7108
			0.7183
3.	{	Arterial blood.....	0.2472
		Venous blood.....	0.2712
	{		0.7523
			0.7288
4.	{	Arterial blood.....	0.2794
		Venous blood.....	0.2494
	{		0.7206
			0.7506
5.	{	Arterial blood.....	0.2581
		Venous blood.....	0.2928
	{		0.7419
			0.7074

As normal blood, in a state of perfect dryness, contains 0.73 of

water, and 0.21 of solid matter, it is easy to see from the foregoing table, that the blood of cholera patients is profoundly altered.

In order to determine whether the blood had lost only water or serum, it was calcined, and the residue of the combustion, after having been weighed, was examined with re-agents. The serum gives more of ash than the clot, and this ash is strongly alkaline and soluble in water, whilst that of the clot does not possess these properties. The results of some experiments in this connection are as follows :

	Combustible Matter.	Mineral residue or Ash.
1. Clot and venous blood, healthy and dry.....	0.9708	0.0232
2. Serum of the same blood, dry.....	0.8998	0.1002*
3. Other serum.....	0.9300	0.0700
4. Other serum.....	0.8280	0.0720
5. Blood of the right ventricle of a cholera patient, dry.....	0.9702	0.0248
6. Blood of (No. 3 of preceding table) a cholera patient.....	0.9740	0.0260

A comparison of the blood of cholera patients with the result given by the clot of healthy blood, shows very clearly that the blood has not only lost water, but also a very considerable quantity of serum. ●

An examination of the alvine evacuations and of those from the stomach of cholera patients was also made, but the former showed nothing remarkable. With the latter, however, it was very different. These evacuations, as is known, are whitish or yellowish, and hold in suspension a mucus-like matter, which has been examined by Andral. This learned physician found it to be formed of cells like those of nuts, and analagous to those in pus ; but they contain, also, spherical granules of a hundredth of a millimetre diameter, and which bear a very close resemblance to the ferment of brewer's yeast. This mucus, subjected to analysis, gave—

Nitrogenous organic matter.....	0.875
Phosphate of lime, with traces of carbonate.....	0.125

The soluble matter of the evacuations forms about 0.018. It contains a considerable quantity of salts soluble in water, as will be seen by the analysis below. These soluble matters are divided into two portions, of which one is soluble and the other insoluble in alcohol. They are both nitrogenous, and complex independently of the saline matters which they contain.

* This last contained unburned carbon.

The analysis of the soluble portions of the alvine evacuations of cholera patients may be tabulated thus :

Water.....	0.9743	Organic nitrogenous portion.....	0.004300
Mucous matter	0.0072	Phosphate lime.....	0.000900
insoluble in water, {		Organic portion.....	0.006308
Matters soluble	0.0185	Mineral matters, { Sulphuric acid.....	0.000640
in Water, {		soluble { Phosphoric acid.....	0.000682
		Carbonic acid.....	0.000149
		Chlorine.....	0.003662
		Potassium.....	0.001200
		Sodium and undetermined matter.....	0.006617
	0.0120		
1.000		Insoluble mineral matters.....	0.000140

The phenomena incident to this disease, the alteration of the blood, so evident even upon slight examination, the emaciation of the body, the cramps, cyanosis, the sunken condition of the eyes, the suspension of the pulse, and of the urine, have led the author to believe, ever since 1832, that the evacuations come from the blood, and contain serum under some form or other. M. Andral (*Comptes Rendus de l'Academie des Sciences*, t. xxv. f. 229,) contends, on the contrary, that the blood in cholera is not altered, but holds the same quantity of albumen as in the normal state; that the evacuations do not contain any; and that the theory which refers the period of cyanosis in cholera to a change which the blood has undergone in its composition by reason of a great and sudden loss of serum, is inadmissible.* Such an assertion, by an authority so learned and eminent, rendered necessary new experiments; for all the liquids of the secretions, whether natural or morbid, must come from the blood.

An attentive study of the chemical properties of the evacuations has shown decidedly that the properties of the albumen are there found, masked by the presence of an alkaline carbonate and bi-carbonate, which prevents coagulation by heat; and, moreover, that it has undergone an alteration wholly peculiar to itself.

One of the instances of most remarkable behaviour will be noted. It is well known that acetic acid does not determine any precipitate in the albumen of either egg or the serum of the blood. Nevertheless, when it is added to the evacuations until all the contained alkaline carbonates have been neutralized, then the albumen can be

* M. Andral operated with blood obtained by bleeding a cholera patient, and hence it may be supposed that the diseased were not seriously or dangerously ill.

coagulated by heat. Anhydrous alcohol and tannin, also give very appreciable precipitates when added to the evacuations; nor can these precipitates be attributed to the presence of mineral salts. A reaction which merits attention is that of chloride of barium, which, upon being added to the filtered evacuations, produces a precipitate formed of sulphate, phosphate and carbonate of baryta. When, after sufficient repose, the clear supernatant liquor is decanted and chloride of calcium is added to it, there is no precipitation, and thus the proof presents itself of the absence of even a trace of combined oxalic acid, and even of free oxalic acid, for this latter cannot exist in presence of an alkaline carbonate. It is evident from the foregoing reactions, then, that the evacuations in cholera contain an albuminoid matter.

On placing the evacuations with various alimentary substances, for the purpose of determining whether any alteration of them would occur, it was observed that the starch-paste dissolves immediately. Hence, it may be concluded that the albuminous matter of the evacuations is *diastase*, analagous to that found in malted barley.

Finally, in seeking to learn whether this *diastase* is the product of intestinal secretion, or originates in the blood, it was found that the blood of cholera patients diluted with water, also possesses the characteristic property of *diastase*; while the blood of healthy persons subjected to corresponding tests is devoid of it.

The deductions from this work are, therefore :

1. That the blood in cholera is profoundly altered; and that it has lost largely of water, albumen and salts.
2. That the globules and the fibrine, having lost their property of clotting, are also altered in their internal constitution.
3. That the albumen is changed into *diastase*.
4. That the mucoid matter exists as has been described by Andral, but with the additional feature of globules of a hundredth of a millimetre diameter and analagous to the elements constituting brewer's yeast.

The presence of *diastase* and of a matter analagous to brewer's yeast is very remarkable, for these substances represent two products which are formed successively at the expense of the

albuminoid matter of the barley, during the germination of fruit and the fermentation of beer.

Is cholera characterized by a simple alteration of the blood and the extravasation of the serum of this fluid? The emaciation, the cyanosis, the cramps, and more especially the presence of a very notable quantity of potash in the evacuations, are they not indicative of a profound alteration of the muscular system, and the loss of the fluid which impregnates its anatomic elements?

The great resemblance between the alvine evacuations of cholera patients and the pancreatic juice—does it not indicate that cholera is due, in large part, to an excessive secretion of this fluid, and that it is chiefly by the pancreatic or Wirsung canal, that all these fluids, and the matter which they hold in solution, penetrate into the intestines, to form there the principal element of the alvine evacuations?

This alteration of the albumen and its transformation or diastase reaction, which may be considered as the fermentation of a ferment, (for the organic ferments change in themselves at the same time, as the products upon which they react,)—can it not lead to new prophylactic or therapeutic means? Is it not possible to prevent the transformation, or even to arrest it after it has commenced, by the use of anti-septic or anti-putrescent agents?

The bi-carbonate of soda, which I have employed with so much success in connection with ammonia and sinapisms, during the cholera epidemic of 1832, and the efficacy of which has been confirmed in the practice of many friends and physicians at Valenciennes—will it not be one of these agents?

A new way is now opened, and may those whose opportunities permit, follow out its course in the interest of humanity.

LONDON, *January*, 1866.

In fulfilling my promise to give you some account of the late outbreak of cholera in England, it will be as well for me first to trace briefly the course of the epidemic on the continent.

Early in May 1865, cholera broke out among the pilgrims, 700,000 in number, who came to Mecca to the feast of Kirban Bairim.

Among these crowds of Mahometans of course the utmost filth prevailed; and sanitary measures being entirely neglected, the disease made great ravages.

Immediately after it appeared at Alexandria, attacking almost exclusively the inhabitants of the low native quarters. Soon after it spread in a Northerly direction to Constantinople, whence it extended through Asia Minor and Persia; and in a North-westerly direction to Aneona, where it was first observed on June 12th, and raged with great severity.

The order in which the several places were attacked corresponded with what might have been expected from the routes of communication, and in the case of Constantinople the importation of the disease was distinctly traced to a particular vessel. It soon after visited Malta, and on August 28th, appeared at Gibraltar, and then spread to the coast towns of Spain and France, appearing at Marseilles on September 11th. From Marseilles it was carried to Paris, the first case being reported on September 24th. It will thus be seen that the course of the recent epidemic differs materially from that taken by the previous ones. In these the disease spread first in a Northerly direction from India and Persia through Russia, thus attacking Western Europe from the North, while in the present instance it extended first along the Mediterranean, coming towards us from the South. It remains to be seen whether this change in the course of the pestilence will have any influence on its ultimate ravages.

In England the first case noticed was at Southampton, on September 22d, which was attributed at the time to the cleaning out of a cesspool, but the peculiar position of Southampton, with reference to foreign access, renders it extremely probable that it was imported from France or the Mediterranean.

The importation of the next set of English cases, however, is not so clearly made out. On September 30th, a gentleman residing at Epping, twelve miles North of London, was found to be ill with unmistakable cholera. He had suffered from diarrhoea for a week previously, during which time he visited Weymouth, and spent two or three days there, and had passed through Southampton. His wife was seized almost immediately after, and both died; and before

long the disease had attacked eleven persons, proving fatal in eight. Among the deaths was that of the medical attendant, a highly respected surgeon, who fell a victim to his devoted attention to the sufferers. The malady, however, spread no farther, and besides the household in which it first appeared, it only attacked three persons, namely, the medical man, and two women, one of whom had been employed in laying out the dead bodies, and the other in washing the clothes from the sick persons.

The house in which the disease at first appeared is situated fully half a mile from any other residence ; and a cesspool, placed on a level above that of the house, was found in a very leaky condition, the soil being saturated with the escaped sewage matter, and the well from which the house was supplied with water giving evidence of similar contamination. The proof of importation in this case is certainly very imperfect. The authorities at Weymouth deny that any cases of cholera have occurred in that town ; and the fact of the man having passed through Southampton, where one or two isolated cases had occurred, cannot be considered as sufficient proof, especially as he was already suffering from premonitory diarrhoea, probably caused by the wretched sanitary condition of his own house.

Since the outbreak at Epping, a few other cases have occurred at Southampton, and in these a novel method of treatment has been adopted, at the suggestion, and under the superintendence of Dr. John Chapman, consisting in the application to the spine of India-rubber bags containing ice, during the cold stage. He maintains that the application of ice to the spine, lowers the temperature of the sympathetic, and paralyzes its influence over the arterial system, which he supposes to be in a state of spasmodic contraction. This contracting influence of the vaso-motor nerves being withdrawn, the arteries relax of their own accord, and allow the free circulation of the blood, thus relieving the cramps and coldness.

This treatment has met with the support of the medical men of Southampton, but it would be highly illogical to judge from such limited experience, seeing the fate of so many former equally plausible and seemingly successful specifics. It appears very doubtful, *a priori*, whether the temperature is actually affected at

such a depth by the means employed, and also, whether in cholera, the arteries are really in the spasmodically contracted condition above referred to. Most persons, too, will consider that further doubt is thrown upon the efficacy of this remedy by the fact that Dr. Chapman has before brought it forward as an unfailing cure for epilepsy, menorrhagia, sea-sickness, and other ailments; maintaining, in fine, that by the application of either heat or cold to the central parts of the nervous system, we possess the power of controlling all diseases, and even of influencing growth.

His theory as to the effect of ice-bags to the spine in preventing epileptic paroxysms, supported as it was, by accounts of several successful cases, attracted the attention of men of high professional standing in London more than two years ago, and the plan was tried in a number of cases at one of our hospitals, the patients being placed under Dr. Chapman's own supervision. Generally speaking, they received no more benefit than is attributable to that improved diet and sanitary condition of hospital patients from the lower classes, which is generally seen to take place in such cases, whatever remedy is adopted. Indeed, in some patients the remedy produced so much depression that Dr. Chapman himself ordered it to be discontinued, and suggested the substitution of extra-warm clothing, and a very liberal diet. The patients, themselves, did not appear always to relish the ice treatment, and I am told, that whenever they could, they used to find their way to the large fires of the ward, in front of which they might be seen sitting in a row, presenting rather a ludicrous appearance, with the tops of the long ice-bags appearing like the ends of huge German sausages above their coat-collars, of course melting the ice as quickly as possible.

With the exception of two or three isolated cases said to have occurred in London, the cholera did not extend itself beyond the places above referred to, and we appear to be perfectly free from it for the present. Many, however, anticipate an extensive outbreak next summer, alleging that each of the former epidemics was preceded by a slight outbreak in the previous year, and that the slight visitation of 1865, may be taken as a forewarning of an epidemic in 1866. But in the epidemics of 1849 and 1854, there

was a much more serious warning in the preceding years 1848 and 1853, than we have just been visited with, in each case occurring earlier in the Summer and attacking the metropolis. However, to be forewarned is to be forearmed, and if the threat of approaching cholera, has only called forth increased attention to the public health of our large towns, the effect cannot but be beneficial, even if we are spared the ravages of the pestilence.

Typhoid fever has been very prevalent of late in this city, and it has been said that death from perforation of the ileum is a more frequent mode of termination of the disease than formerly. Certainly this seems to have been the case within the limited range of my own observation. One of the cases I have lately seen is perhaps remarkable enough for particular notice. About a month ago I was present at the post-mortem of a man who had been some months under hospital treatment for albuminuria with dropsy—he had been an in-patient for more than a fortnight before his death—having had no febrile symptoms, appetite very good, and health apparently improving, when he was seized with peritonitis and died in a day or two. At the autopsy we found several ulcers in the agminate follicles of the ileum, most of them healing, one with the perforation which proved fatal, and one with a characteristic slough of typhoid deposit still adhering to it. Other cases of perforation I have seen, have been by no means severe cases of fever, and, in general, it appears to be an established fact that the intensity of the fever bears no constant relation to the amount of abdominal disease, a fact full of practical warning as to the importance of prolonged care and caution, during the convalescence from slight cases of typhoid.

The most notable recent outbreak of typhoid among us, is that at the London Orphan Asylum at Clapton. Out of four hundred and sixty-one inmates, two hundred and ten have been attacked within a month. The first cases occurred early in November, 1865, and before the 16th of that month, over one hundred children were attacked; ninety-one fresh cases occurred between the 16th and 23d, and since the latter date there have been nineteen more. The disease has proved fatal in twelve cases, or less than 6 per cent., while the ordinary mortality is 15 to 20 per cent. Now this

outbreak has been far too rapid to allow us to suppose, that one child was first affected and communicated the disease to the rest. We are driven to look for some common source, from which all the children have been impregnated with the fever poison. At first, general suspicion attached to a heap of manure in a field at the back of the Asylum; but Dr. Tripe, the medical officer of health for the district, in a recent letter to the *Lancet*, opposes this view. He states that the manure heap in question had been there many months, and that it was four hundred and fifty feet distant from the buildings, and moreover, that there was another and more obvious way of accounting for the fever. The drainage, he says, was extremely imperfect, the sinks and water closets not being properly trapped, so that there was a sewage smell prevailing some of the rooms shortly before the outbreak. A drain running underneath the building had also been choked, and was cleared out about a month before. These facts convey their own warning as to drainage, and I think they ought also to remind us of the importance of destroying the poison contained in the evacuations of typhoid patients, by adding some powerful disinfectant to them "before letting them loose on society," by permitting them to pass into the common sewers.

Little has been done to check the progress of the cattle plague since I last wrote. Another order in Council has been issued—not prohibiting the transit of cattle in toto, but conferring powers on the Justices of the peace in any particular district to stop all cattle fairs, and prohibit the importation of cattle into the districts over which their authority extends; such prohibition to remain in force until the 1st March. This has been acted on in some instances, and may doubtless serve to protect those particular localities from the disease, but it has not been acted on to such an extent as to affect the general spread of the plague, as is proved by the increase in the number of deaths, which last week reached nine thousand.

I was present at an interesting discussion of the Pathological Society, on Tuesday the 2d inst., on the subject of the relations between the cattle plague and small-pox. A veterinary surgeon who had been inoculated on the back of the hand while making a post-mortem examination of a cow which had died of the cattle

plague, exhibited his hand to the society. Dr. Quain, one of the cattle plague commission, maintained the identity of the process which had been going on on the hand, with that following ordinary vaccination, stating that the course of the vesiculation and pustulation had been exactly similar. There was, however, much more general inflammation than commonly follows cow-pox, probably due to the ordinary irritant effects of any morbid poison. Dr. Quain, also maintained, the great similarity between the eruption in small-pox and that in cattle plague, and considered it very probable that the two diseases would really be proved identical, and that, therefore, in vaccination, we possessed a protective against the latter as well as against the former. Dr. Sanderson, who has been appointed by the Commissioners to investigate the symptoms of the rinderpest, stated, on the contrary, that the eruption in the cattle disease presented marked distinctions from that in small-pox; that in the former there were no true vesicles, but small *solid* elevations of the cuticle, some of the deeper layers of which afterwards broke down, forming a semifluid mass somewhat resembling pus, but not constituting a true pustule. Dr. Murchison, who has also been investigating the subject, was inclined to believe in the identity of the diseases, founding his opinion not only on the similarity of the eruption, but also on the resemblance of the pathological changes seen in the alimentary canal in the cattle plague, to those recorded as found in dissections of persons dying of small-pox; and also on the fact that a similar cattle disease exists in India which is believed to be small-pox. He concluded by stating that he hoped the matter would soon be set at rest by experiments instituted throughout the country. A further communication from Dr. Murchison appears in the *Lancet* of to-day, in which he discusses the question more fully, and gives several cases in which inoculation with vaccinia appears to have protected cows from the rinderpest, when others not inoculated have died. The subject, however, cannot by any means be considered as settled at present, and sufficient evidence only has been brought forward to encourage complete investigation. If it results as Dr. Murchison and others expect, it will be a triumph of medical science, only second to the introduction of vaccination by Jenner.

The medical profession here, which has never been overburdened with public honours, has lately had the satisfaction of seeing two of its members rewarded with lasting evidence of Royal favour. Professor Fergusson, of King's College, London, and Professor Simpson, of Edinburgh, have recently been created baronets. Sir William Fergusson, has since 1841 held the chair of surgery at King's College, and has gained a wide-spread surgical reputation as a brilliant and skillful operator.

Sir James Young Simpson, who is, I believe, the first Scotch professor ever made a baronet, will long be remembered as the discoverer of the anæsthetic value of chloroform, by which he has conferred so great a boon to suffering humanity throughout the world, and also greatly furthered the advance of practical surgery. He has also contributed greatly to the improvement of obstetric practice, and within the last two or three years he has introduced and strongly advocated the practice of acupressure for the control of hæmorrhage under all circumstances. It is believed by some that this practice will entirely supersede the use of the ligature. It appears to be extending in Scotland, where it has given rise to a fierce controversy, but cannot be said to have gained much ground here as yet. The moderation displayed by Professor Simpson in the controversy on the acupressure question, as contrasted with the vehemence and bitterness of Mr. Syme, has gained the former increased esteem throughout the profession, and it is with unfeigned pleasure that we have seen the Government acknowledging the value of his services to medical science.

NEW YORK, *February 22, 1866.*

The birth-day of the Father of his Country has been set apart as a holiday by the Legislature, and is observed throughout the city in the most general manner. The banks and stores are closed; the cannon boom forth their salute from the public squares; the warm sunshine streams into the streets, which are crowded with people alive to the triple temptation of the holiday, the delicious weather, and the procession. But alas! there is no holiday for the physician,

and the press must be fed at the appointed time. If, therefore, this letter be rather short, you must make allowance for the general festivity of the day.

The central question of medical interest during the month has been the Health Bill, designed to improve the sanitary condition of this city and Brooklyn. Against great obstacles, strong political organization and lavish outlay, the Citizen's Association has steadily advanced to the consummation of this grand object. Its ranks have been swelled by the representative men of our profession, and by those laymen whose intellect, wealth and reputation are identified with New York. They have expended their money and devoted their time most thoroughly to the plan which they had proposed for themselves—have called meetings, influenced the press, littered the dwelling-houses with tracts, written to instruct and arouse the public mind, and have embodied an exhaustive report of the exact condition of the whole city, with maps, statistics, and suggestions, in a volume of three hundred and sixty pages, published by the Appletons, and which should be used by the friends of science and progress over the world. It is unnecessary to admit that New York is filthy; full of presentable causes of disease; that its death-rate can be readily diminished; that small-pox, typhus, and typhoid fever disgrace its sanitary state; and that the mortality among its children would have satisfied a Herod. At last, under the steady pressure of the Citizen's Association, and the distant mutterings of the pestilence, the health bill has been forced through the Legislature. The commission will now consist of the four police commissioners, the health officer of the port, and three physicians and one layman, to be appointed by the Governor. One of these physicians is to be appointed from the city of Brooklyn. A sanitary Superintendent, with a salary of \$5,000, is to be appointed by the Board, as are two deputy Superintendents, (one from Brooklyn,) with a salary of \$3,500 each. Fifteen inspectors, liberally paid, are also to be appointed, ten of whom are to be physicians.

It is natural that the general anticipation that the cholera will reach us with the warm weather, should have led to the assignment of the topic for a general debate at the Academy of Medicine, and the discussion has been commenced.

The colleges are preparing for their commencements, and the throng of students, numbering many from all the Southern States, look forward to their release from lectures. The Bellevue Hospital Medical College has thrown open the new lecture-room for some of the lectures, though the building is not yet completed. The alterations in progress and the new building offer, in addition to spacious accommodations for the new out-door or dispensary department, a lecture room, which will seat from six to seven hundred students, and a dissecting-room most admirably lighted and ventilated.

At the College of Physicians and Surgeons the class has so increased this year, that the Faculty have been seriously led to consider the question of enlarging their accommodations, while the medical department of the University, with its distinguished corps of Professors, also recognize a great increase in the size of the Winter's class.

While the colleges are thus prosperous, the profession recognize with great pleasure the establishment here of the "Medical Record," in most competent hands, and with liberal provision for its future success, and view with equal pleasure the appearance of the new medical journals throughout the South. All these developments presage a future reunion of the representatives of our profession from all parts of the country.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

NOTE.—It is impossible to find room, in this number, for the Reviews, etc., that have been prepared.

MISCELLANEOUS.

Compression in Cephalalgia.—M. Guyon related, in a paper, read at the Academy of Sciences, that during the epidemics of yellow fever which he witnessed in the West Indies, he was often in the habit of feeling the pulse, at the temporal artery. One day, having compressed it with more than usual firmness, he found that the intense cephalalgia, which is an accompaniment to this

affection, was greatly relieved; and further trials made by compressing both temporals were attended with complete disappearance of this symptom. It becomes then a question, whether this fact could be turned to practical account, and whether it would be attended with any notable inconveniences. The headache in yellow fever constitutes so predominant a symptom, that some practitioners have even resorted to scarifications and opening the temporal artery to obtain relief. Compression has, indeed, been used, after a fashion, by the native women, who, dividing a lemon in two, bind the halves on each temple, by means of a bandage passed several times around the head. This cannot, however, be long continued, without a certain amount of irritation of the skin being induced; but there can be no doubt, that the pain is relieved or removed in this way, as long as the pressure is continued. Moreover, as well as under a more effectual mode of compression, not only is the pain relieved, but the patient comes out of this state of torpor or somnolence, breathes freely, and replies cheerfully to questions addressed to him. The best mode of exercising compression is by a semi-circular curved band of steel, provided at each end with a pad resembling that of a hernia truss, and which is movable, so that the compression need not always be made precisely on the same spots. Enough space should be left between the steel arch and the forehead to admit of the cold applications being made to the latter which are found so useful in yellow fever. M. Guyon feels certain that compression will also be found of the same utility in the cephalalgia of other forms of fever.—*Medical Times and Gazette*.

A Pharmaceutical Boon.—

R_y. Iodinii Tinct. Comp., ʒj.

Ammoniaë Liquoris Fort., ʒj.

Camphoræ Tinct. ʒj.

Place this mixture in phial which should be well corked. After a period of thirty-six hours, filter, and return it to the phial for future use.

Iodine thus prepared, produces no discolouration when applied to the skin, while it has all of the virtues and effects of the ordinary preparation.

*Messrs. Editors :—*Although I entertain a very holy horror of all formulæ as such, I do my susceptibilities no violence by sending you the following for compounding copaiba, in such a manner, as to relieve this remedy of its offensive and disgusting taste, and thus render it tolerable to the most delicate stomach.

The physician is often compelled to deny himself the administration

of this medical agent, because of the irritability of the stomach, which the copaiba occasions. I have used this formulæ for many years, with great satisfaction—found it uniformly tolerated, and of great benefit in all cases of irritation of the mucous passages. It has the singular advantage of remaining a *perfect mixture* for many months after being compounded, undergoing no decomposition, even in warm weather :

R. Acaciæ, pulv. ʒ ss.

Aq. font, q. s., to make a thick mucilage. Add guttatim.

Copaibæ f. ʒ., rubbing and thoroughly incorporating it with the mucilage.

Ætheris Nitrici Spt., f. ʒ. ss.

Aq. fluvi, f. ʒ. vi.

Ol. Terebinth,

Opii Tinct.

Acid Nitric,

Lavend. Tinct. C., f. ʒ. j.

Rub well all the ingredients as added to the mucilage. This should make a milky fluid.

Dose.—One teaspoonful three times a day.

An Antidote for Prussic Acid.—This has been proposed by Messrs. T. and H. Smith. It consists of magnesia and perchloride of iron, and its effect depends upon the formation of the compound known as Prussian blue. It is recommended to give the patient first the magnesia, (one or two drachms,) made into an emulsion, with water ; and then to give, in water, a solution of sixteen minims of perchloride of iron and twelve grains and a half of green vitriol. [Lancet.

Pharoah's Serpents.—Now that these amusing and scientific toys are in such extensive demand, it is right that their nature and composition should be made generally known, with a view to determine whether their employment is compatible with safety, or whether the products of their combustion are detrimental to health. These toys consist of sulphocyanide of mercury, a compound, as the name implies, of sulphur, cyanogen, and mercury, the whole of which substances are volatilized by heat, each of them, during combustion, producing a number of more or less injurious and even poisonous products. The sulphur is, for the most part, converted into sulphurous and sulphuric acids, gases of an extremely irritating and suffocating character. The cyanogen, a highly poisonous substance, is partly volatilized unchanged, and is partly decomposed, evolving carbonic acid, nitrogen, and also, by its union with a portion of the

sulphur, giving rise to the formation of the very deleterious vapor of bisulphide of carbon, while a portion of it is converted into the organic substance termed mellon, and which constitutes, in fact, the chief residuary constituent of the so-called serpents; while, lastly, the mercury is sublimed in the state of vapor. Such being the injurious and poisonous nature of the gases evolved, it is very necessary that persons with delicate lungs, or suffering from any disease of those organs, should be most careful not to inhale the products of the combustion of the "serpents' eggs;" and in all cases great care should be taken that the room in which these toys are burned be freely ventilated. So satisfied are the authorities in Prussia of their deleterious properties, that the Government has forbidden their sale, except by persons who are specially authorized to sell poisons.—*Lancet*.

Rigor Mortis not Muscular Contraction.—The author said the commonly received theory is, that it is an energetic muscular contraction, which is erroneous, as proved by the following: 1. The rigor of opposing sets of muscles does not cause the redispotion of limbs in obedience to the superior powers of the stronger set of opponents. 2. It does not cause the rupture of the weaker set of opponents. 3. If either of the flexors or the extensors of a limb be divided, and the limb be placed, before rigor has set in, in the position in which it should be drawn by the cut set of muscles, had the action of these been unopposed, the uncut set of muscles do not alter that position. 4. Contraction and the presence of irritability being an inseparable association, it follows that if irritability be absent for a long time, immediately prior to the supervention of rigor mortis, the latter can not be regarded as a contraction. 5. The microscopical appearance of muscular tissue affected with rigor mortis is entirely different from that of muscular tissue in a state of contraction. The truth of these arguments he had demonstrated by a variety of experiments, selections from which were set forth in detail. Photographs of some of his results and examples of others were submitted to the section. So highly important were these considered that the committee recommended him to continue his experiments and observations, and a grant of money was awarded to enable him to carry them out.—*Lancet*.

Ozone.—The following are the reliable facts known up to this time respecting ozone: 1. Ozone in a natural state is always present in the air in minute proportions; viz., one part in ten thousand. 2. It is destroyed in large towns, and with special rapidity in crowded, close, and filthy localities. 3. Ozone gives to oxygen properties which enables it to support life. In this respect

it acts like heat ; its effects are destroyed by great heat. 4. Ozone diffused through air in minute quantities produces, on inhalation, distinct symptoms of acute catarrh. 5. When animals are subjected to ozone in large quantities, the symptoms produced, at a temperature of 75° , are those of inflammation of the throat and mucous membranes generally, and at last congestive bronchitis, which, in carnivorous animals, is often rapidly fatal. 6. When animals are subjected for a long period to ozone in small proportions, the agent acts differently, according to the animal. The carnivora die, after some hours, from disorganization of the blood separation ; but the herbivora will live for weeks, and will suffer from no acute disease. 7. The question whether the presence of ozone in the air can produce actual disease, must be answered cautiously. Science has yet no actual *demonstrative* evidence on the point. But the facts approach to demonstration that catarrh is induced by this agent. All else is as yet speculative. 8. During periods of intense heat of weather ozone loses its active power. 9. On dead organic matter undergoing putrefaction, ozone acts rapidly ; it entirely deodorizes by breaking up the ammoniacal products of decomposition. At the same time it hastens the organic destruction. 10. There is an opposite condition of air in which the oxygen is rendered negative in its action, as compared with the air when it is charged with ozone. Air can thus be rendered negative by merely subjecting it, over and over again, to animals for respiration. The purification of such air from carbonic acid and other tangible impurities, does not render it capable of supporting healthy life ; but ozone restores the power. In a negative condition of air, the purification of the organic matter is greatly modified, and the offensive products are increased. Wounds become unhealthy and heal slowly in such negative air. 11. There is no demonstrative evidence, as yet, that any diseases are actually caused by this negative condition of air ; but the inference is fair, that diseases which show a putrefactive tendency, are influenced injuriously by a negative condition of the oxygen of the air. It is also probable that during this state, decomposing organic poisonous matters become more injurious. 12. As ozone is used up in crowded localities, and as it is essential that ozone should be constantly supplied, in order to sustain the removal of decomposing substances and their products, no more attention to ventilation and other mechanical measures of a sanitary kind can be fully effective, unless the air introduced be made active by ozone. Fever hospitals and other large buildings in towns should be artificially fed with ozonized air.—*Brit. Med. Journal.*

MEDICAL NEWS

Ventilation of Sewers.—M. Robinet, a French chemist, has devised a means of freeing the sewers from the effluvia which escape in the attempt to ventilate them. He proposes that the furnaces of factories shall derive their supply of air from the sewers. The gases will be destroyed by combustion, fresh air from the atmosphere supplying their place. He calculates that if the combustion of only 70,000 tons of coal can thus be economized annually in Paris, or only a tenth part of what is burned there, the sewers will be supplied with about 140,000,000 cubic feet of fresh air—that is, more than seven times their contents—daily. He would apply the same principle to the ventilation of cesspools, etc. It has been partially in use already, on a small scale.—*Scientific Review*.

Honours to French Physicians.—The Emperor of the French has conferred the insignia of the Legion of Honour on the house physicians of the Paris Hospitals, who have shown great devotion in their attendance on the cholera patients admitted during the present epidemic prevalence of that disease.—*Med. News*.

Chloroform as an Internal Remedy.—Dr. A. P. Merrill, of New York, publishes in the *American Journal of Medical Science* another article on the internal use of chloroform in congestion of intermittent fever, etc. Thirteen cases are related. The remedy is generally given in drachm doses.—*Med. and Surg. Reporter*.

A writer in *Once a Week*, gives a description of a Russian ball at Moscow, during which the ball-room was enlivened by the phenomenon of a snow-storm produced by the sudden lowering of the temperature of the room. The room being uncomfortably warm, a gentleman lowered a window from the top, when the cold air rushing in, so condensed the vapor near the ceiling that it descended in the form of snowflakes.

Nitrous Oxide and other Anæsthetics. By J. M. CARNOCHAN, M. D., Surgeon-in Chief to the State Emigrant's Hospital, New York, etc., etc.—I desire to present through the pages of the *Medical and Surgical Reporter*, a general statement of the facts respecting three surgical operations which I performed, using nitrous oxide gas, administered by Dr. Colton, as the anæsthetic, and my opinion on the value of this agent as compared with chloroform and ether.

The first operation took place on the twenty-second of last July, and was the removal of the entire breast, and glands of the axilla, for cancer. The patient, a lady in feeble health, was suffering from disease of the throat and lungs and general debility. In thirty-five seconds from the time she began inhaling the gas, she was in a profound anæsthetic sleep. She remained insensible for sixteen consecutive minutes, until the operation was completed, and in forty seconds, from the time the bag was removed, awoke to consciousness without nausea, sickness, or vomiting, as is so often the case with the inhalation of chloroform and sulphuric ether.

The second and third capital operations occurred at the State Emigrant's Hospital, on the second of December, and consisted of two amputations of the leg. The time required to produce an anæsthetic sleep in the first patient, a male adult, extremely debilitated and worn out by disease, was forty-five seconds; whole duration of the operation and influence, two minutes and a quarter. No nausea or unpleasant symptoms.

The third operation was on a boy of about thirteen years of age. The time consumed in the inhalation, operation, and recovery from the anæsthetic sleep was two minutes, the gas working equally as in the other cases, and the patient, after complete anæsthesia, awaking entirely free from unpleasant symptoms.

For minor operations, or for capital operations, such as amputations, which when properly performed should require but a few minutes, I have no hesitation in stating that the nitrous oxide gas, as an anæsthetic, is far superior to either chloroform or ether. Insensibility is suddenly produced, and the patient recovers consciousness quickly, the operation being attended by no nausea or sickness, and without the dangerous effects often incident to chloroform and ether.

It is worthy of remark that the nitrous oxide gas approximates, in its chemical combination, to the composition of the ordinary atmosphere, and we may thus, inferentially, account for its more favorable influence. Whether it can be used in operations, which from their nature require from half an hour to an hour's time, remain still to be proved by actual experiment.

The duration of the anæsthetic influence in the case of the first operation, previously alluded to, is the longest on record; and I may here state that this is the first capital operation performed under the influence of the gas, since the great discovery of Wells, of Hartford, twenty-two years ago, that a harmless sleep could be produced by a chemical agent, which could annul for the time being the greatest suffering. It is not at all improbable that had Wells lived and had the boldness to follow up his early successful

experiments, chloroform and ether would never have been thought of as anæsthetics.

To G. Q. Colton is due the credit of reviving the use of this important agent, in the practice of dentistry, after a lull of twenty-two years.

The value of a safe anæsthetic agent, which can be used without anticipation of danger by the patient, is a great boon to suffering humanity, and I have related thus minutely its action in my own cases, in the belief, that if similar favorable results are met with by others, the nitrous oxide gas will supersede all other anæsthetics now in use.—*Med. and Surg. Reporter.*

The Hastings Medal.—The subject of the Prize Essay offered for competition by the Council of the British Medical Association is "On Shock after Surgical Operations and Injuries." The essay not to exceed twenty-four pages of the *British Medical Journal*, and to be sent in before July 1st, 1866.—*Dublin Med. Press.*

Medical Jurisprudence.—Among the most approved of recent class-publications in Paris, is a volume by Brilland Lanjardiere, "De l'Infanticide," a medico-legal study.

Malgaigne, the eminent French Surgeon, whose death was recently announced, was born at Charmes-on-Moselle, the 14th day of February, 1806. He graduated in 1831, published in 1834 his "Manual of Operative Medicine," in 1838 his "Treatise on Surgical Anatomy and Experimental Surgery," and in 1840, an annotated edition of the complete works of Ambrose Paré. His other memoirs, and papers on various subjects, are very numerous.

The Galveston Medical College, commenced its first course of lectures on the 4th of January. Dr. John H. Webb is Dean. There are nine professors.

The course of lectures in the Savannah Medical College, was resumed on the 17th of November last.

New Anæsthetics.—Mr. Nunneley showed to the members of the British Medical Association two substances, the bromide of ethyl, and the chloride of olefiant gas, which for some time past he had used as anæsthetics. He stated that he had not lately performed any serious operation, either in private practice, or at the Leeds General Infirmary, without the patient being rendered insensible by one or the other of these agents; each of which he believed to

possess important advantages over chloroform. They were among the many analogous bodies experimented upon by him, and were favorably mentioned in his essay on anæsthesia, which was published in the *Transactions* of the Association for 1849. At that time the difficulty and cost of their manufacture were too great to allow of their being commonly used. This difficulty had, however, been overcome; and, should their use become general, they can be made at a cost not exceeding that of chloroform, if not at less. They both act speedily, pleasantly, and well. The patient might be kept insensible for any length of time, while the most painful and prolonged operations were being performed. No disagreeable symptoms had in any case resulted from their use.—*Chem. News.*

Photographic Line Engraving on Steel.—We have recently seen specimens of morbid anatomy, geology, and natural history, almost instantly engraved by this process on steel, securing plates which will give any number of copies of the object required, with all the delicacy and minuteness of detail of photography, and the force and transparency of line engraving. We have good reason to think that difficulties which, but a short time ago were looked upon as insurmountable, have been conquered, and that photographic line engraving on steel has become a practical and reliable art. The process is accomplished by two means—optical and chemical. A photograph is taken from nature, and by optical and chemical means converted into a line engraving. Former essays to preserve photography on metal have been limited to aquatinto—a variety of engravings defective in transparency and incapable of producing any large number of prints. To Baron Egloffstein, well known in connection with the topographical surveys of the Pacific coast, and who served with distinction in our army during the first years of the war, belongs the credit of the discovery and application of this art, from which we look for valuable results in photomicrography.—*New York Medical Journal.*

EDITORIAL.

The war-cloud, which has so long darkened the horizon, is drifting away, and the sun of Peace essays, once more, to brighten and beautify our land. The red hand of slaughter is stayed and, from her protracted banishment, Charity steals cautiously forth to cleanse and cover it, with her Heavenly mantle. The explosion of shell, "giving note of dreadful preparation," is replaced, by the sweet music of Industry, and the cheering hum of machinery supersedes now the familiar roar of artillery.

Many thousand Physicians, but recently seen on the field of war, have laid aside its insignia, and seek again the calmer fields of peace.

Lake and river, mountain and valley present the spectacle of thousands returning to long deserted hearths, and the physician exchanges the sad scenes of the hospital, for bedside visits, in quiet homes. All are resuming their wonted labours, seeking to promote the interests of their respective avocations, and it would be strange if, among these, were not found the members of an active and progressive profession.

While the great majority in life rely upon a material capital, seeking to develop this, by industry and experiment, it were unreasonable to suppose that those whose support springs from the immaterial but immeasurable capital of the mind, were not carefully guarding their treasure and striving to increase it.

Agriculture and navigation, sea and land, mines and minerals, steam and water are all used by the many, as ministers to prosperity and success, but the mind is the only power, to which the Physician can appeal, for personal or professional wealth.

While then, all are seeking, at the present time, to guard their capital and improve it, the imperative duty of the Physician is to be, if not a leader, at least a companion, in this movement of progress and development.

The capital of the Medical Profession is its education, and duty, both public and personal, demands, that this be permanently protected and progressively developed.

At all times a subject of vital interest and importance, medical education, now that labour and capital are being reorganized and reestablished, specially demands protection and support.

It were easier to write an essay than an editorial upon this fruitful theme, yet the salient and most prominent relations of the subject will be briefly considered.

American medical education is confessed, both here and in Europe, to be pretentious and superficial. Where in other Countries, the student passes from the College halls into the wards of a hospital, preparing by practical study and consecutive observation, to discharge honestly and efficiently the duties that are soon to devolve upon him, in America as a rule, after giving pecuniary evidence that he has listened (or not listened) to two brief, incomplete and inefficient courses of lectures, he passes the nominal ordeal of an examination, and then assumes the grave responsibilities of the Physician and Surgeon. What is accomplished in six or eight years, in other Countries, with liberally endowed institutions, complete apparatus, appliances, museums, scientific collections, and a corps of teachers, whose names are "as familiar as household words," in America is attempted now, in as many months.

America must either be inestimably blessed, with teachers and students who are mental giants in the land, or she is daily, consciously and systematically pursuing a course which is an outrage upon medical Science, and an irreparable wrong to those who elsewhere, offer an honest worship in her temples. Every candid Physician would have no hesitation, in deciding which of these alternatives is to be selected and admitted.

With improved facilities and better opportunities, chemical and illustrative, (if an efficient and just use were made of them by American teachers,) it cannot be denied, that the education of the Medical Student is yearly becoming more superficial and discreditable.

The preceptorial system has been comparatively abandoned and is daily tending to become obsolete. All must admit that the advantage of the student, in a retired office, are not comparable to those which can be offered him in cities and at colleges, but none will deny, that the honest preceptor does more for his student, than

is accomplished in the places mentioned. Clinics and operations and microscopic and instrumental examinations are all highly instructive and improving, if they are actually and honestly placed within the reach of each member of a collegiate class, but what are the facts? What becomes of several hundred students around a single bed, or around an operating table or the stand of a single microscope? What is the answer of every one who will give honest testimony? If the collegiate system, as it is termed, were energetically and fairly tried by giving, as has recently been proposed, a perpetual course of lectures, what information, even then could each student derive, when a class of hundreds is summoned to listen to a clinical lecture which, from physical causes, is inaudible to all, but a proximate few? When touch is impossible, hearing impracticable, and vision obstructed, by what channel is knowledge then conveyed?

If, however, you substitute, for a perpetual course of lectures, a term of four or five months, by what mathematical system of progression, shall we estimate this absurdity? When no Professor can examine, with true efficiency a single "branch" of the great tree of Medical Science in four or five months, what shall we say of American Schools, which require the student, in this brief period, to examine them all? When each teacher frankly admits, that he can not find time, in four months wherein to make even a cursory examination and exposition of his "branch," what is to be said of a system, that not only expects the student to do what his teacher is unable to accomplish, but to accomplish collectively, what each instructor confesses himself individually unable to execute? It is difficult to realize, that these patent anomalies not only exist, but that they are published everywhere, and accepted as orthodox and reasonable propositions. What better picture could Hogarth have presented of the absurd, than a clinical lecture which, with few exceptions, none can hear, and an operation on tissues which none can see? Yet this scheme is offered as a substitute for the preceptorial system, and Colleges throughout the land are appealing to students to support it, and to the Profession to give it their sanction and sympathy.

As has been stated, no one can deny the great advantages that

Hospitals, and Colleges and Cities offer to the student, but until radical changes are so made, that the advantages claimed can be really enjoyed, the preceptorial system of instruction is infinitely superior and must command the support and approval of the Profession.

Under these circumstances, can nothing be done, and is this discreditable and inefficient system of medical education to be continued?

According to the American scheme of multiple Government, with many Sovereign States, delegating such innate rights, as in the aggregate constitute a Federal Power, it is idle to expect that there will ever be a National Medical College, such as is to be found in so many of the Countries of Europe—a College with an ample corps of efficient, distinguished, well paid, and well known teachers; requiring by its charter, an ample period for scholastic attendance; abundantly supplied with approved apparatus, instruments, appliances and scientific collections, organic and inorganic, and granting a Diploma, only, to those who can furnish unquestionable proof of literary and professional efficiency.

There is no anticipation that there will ever be one or more Institutes of this kind, and most probably all Medical Colleges, that are to exist in this Country, must derive their charters from the States, in which such Colleges are respectively situated. The Medical Schools are consequently all now, and must hereafter be, established on State authority. Each State has its own system of laws in this connection, and Medical Colleges, with varied charters, therefore, are yearly established throughout the land. The competition and rivalry among these Colleges is infinite and Professionally ruinous.

The basis of such rivalry is not in the adoption of the highest standard, the longest "term," and the most thorough work, but in the shortest possible period, required of the student for scholastic attendance, and in the smallest pecuniary tribute which is to be levied upon him. There is not manifested either, that generous and laudable spirit, that true test of corporate, as well as mental and moral greatness, which gives commendation where it is deserved; but, on the contrary, there is a disposition frequently exhibited of withholding commendation that is actually due, and unjustly, as well

as ungenerously, desiring the suppression of facts which, however indisputable and however creditable to rival Institutions, are yet unwelcome, because damaging in their results.

Such a course with Institutions, as with individuals, must, if pursued, justly and irredeemably entail a forfeiture of the confidence and respect of all who admire a high-toned spirit of competition, and of those whose practical recognition is either creditable or desirable.

As is admitted, there is not required, by American Medical Schools, that high standard for graduation, a statement of which is so frequently and persistently published, for with such brief periods, as are now adopted, during which to teach the student the Science of Medicine, there are but few who could successfully endure the ordeal of a true examination. Rejection would be the rule, and graduation the exception, and not, as is now most generally the case, the conferring of degrees upon those, but few of whom are capable of preparing a thesis either grammatically or Professionally correct.

How many schools in this country observe their published pledges, in regard to the requirements for matriculation? It would be unsafe to reply, for certainly if most of the graduates are able to respond satisfactorily to these requirements, when entering the College, they lose this ability during their connection with it.

If that very moderate degree of proficiency, required for matriculation, be not evinced in the written thesis, and at the final examination, it is not reasonable to suppose that it existed at the period of matriculation, without the damaging admission, that the student has retrograded, under the influence of his teacher. It is, however, not a matter of inference or deduction, but one of plain testimony and readily admitted fact. There is no pretense of an examination of the matriculant now made, by most American Medical Schools. Matriculation has long ceased to be a test of even the humblest degree of proficiency. From being a scientific or even a literary test, it has become confessedly a financial transaction. After a distinct and undeniable statement made in the orthodox and familiar Circular, relative to the requirements for matriculation, such Circular or Announcement being occasionally couched (somewhat

amusingly), in culpable syntax and orthography, the doors are opened, as at any other place of assembly, the card of admission is purchased, and the unquestioned student, agreeably surprised but reflective, is pleasingly and hospitably invested, with the very accessible honours of the matriculant.

A fair, truthful and undeniable picture of most Colleges with State charters, is and has been given. Matriculation requirements no longer observed; rivalry in the brevity, rather than in the length of the Collegiate term; ruinous competition in regard to the pecuniary cost of the degree; a consecutive and reprehensible effort to abbreviate the number of years, required for medical pupilage, previous to graduation; a confessed inability to even cursorily examine any one of the branches of medicine, in the selected length of term, (there being of course exceptions made in this connection in regard to those Institutions whose term exceeds six months); unsatisfactory results as evinced in the thesis presented, and in the general attainment of most of those, upon whom the diploma is conferred. This is a fair and familiar picture.

The system of education, as now adopted by most State Institutions, has been fairly and carefully tried, and it certainly does not, with a few exceptions, command either the approval or respect of the Profession.

When the American Medical Association was organized, there was a strong and reasonable hope that, as a great and representative body, it would materially elevate the standard for graduation in American Medical Colleges. The Association has undeniably been the means of eliciting papers highly creditable and valuable, but in accomplishing the result mentioned, it has, even in part, signally and totally failed. The Association is, indeed, so organized, that the Profession, as a body, can not reasonably expect any decided improvement in this connection. According to the basis of representation, constitutionally established, a Faculty of seven in any Medical College is entitled to two delegates, but the same number of Physicians, however eminent in private practice, are not entitled to one; if ten of these Physicians establish a County Society, they are allowed one delegate. Fourteen Physicians, if representing two Colleges, are allowed four delegates,

the same number if representing two Societies of eight or nine members each, are not allowed one; but if members of one Society are allowed only one delegate. In the absence of County Societies, the Physicians of the County are not allowed any representation whatever; in a Society they are allowed one delegate for every ten members, and one also for every fractional number over five; sixteen Physicians in Society being allowed thus two delegates, etc.

It is only necessary to state these facts to show that this Association is to a most injurious degree, subject to the power of the Medical Schools. Whatever may be the theory of its organization, with the admitted fact, that the great mass of the Medical Profession is unorganized into Societies, or otherwise, it is undeniable then, that the great question of Medical Education in this body is subject in legislation, to the controul of the Medical Schools.

It is evident that reform and better management are not to be expected from this source.

Is the Profession helpless then, and powerless in the efficient management and satisfactory disposition of the great question of Medical Education? Happily this is not the case, for it has yet a reserved and irresistible power.

Nine-tenths of the Medical Colleges of America, are dependent absolutely and helplessly on students, for their existence and support. Almost every student is associated with his preceptor. The great majority of students are actually in constant communication with their preceptors, being guided by them, not only in the course of study selected, but especially in regard to the Medical College, which it is most advisable for them to attend. The great power of patronage rests where it ought to rest, and where it will always remain, with the individual members of the Profession, *with the Practitioners of the Country.*

After lamentable and admitted failure, in attempting to controul Medical Colleges, and Medical education, by legislation, either in States or Associations, the question comes naturally back to that tribunal which alone has legitimate jurisdiction in regard to its disposition. There is no result from past legislation, and no reasonable hope from the legislation of the future, "*ab actu ad posse valet consecutio;*" indeed, legislation should never have been

asked or expected, for it is unnecessary, unsatisfactory and inefficient. The power to controul this subject, rests with the great body of the Profession.

It is to be regretted that it should ever have been committed to the Schools. They do not justly constitute the tribunal, before which this question should be tried, and to which it can be either safely or judiciously committed. On the broad principle of law, they, as interested parties, are to be excluded in the trial of the case.

No one can sensibly dispute this, for it is but the practical recognition of a law, that is as old as law itself. "*Aliquis non debet esse judex in propria causa*" is a legal aphorism sanctioned by time and common sense; the justice of which no one has had the temerity to dispute. This question, then, belongs solely to the Practitioners of the country, who, if conscious of their power, and jealous of any infringement of their rights, will demonstrate in action their intention as well as their ability to make a safe and satisfactory disposition of it.

Every preceptor has a quadruple duty to perform; to the public; to his profession; to his pupil, and to himself. Let this duty be persistently and faithfully discharged, and the great problem of Medical education is already solved. Once admitted and recognised that this is the only, and proper course in regard to an elevated standard of Medical education, that each Physician must look, not to Legislatures and Associations and Societies, but to himself to have the great evils now existing redressed, and this great work will soon be efficiently and promptly accomplished.

Each Practitioner bears the same relation to the great body of the Profession, that the grain of silica does to the sea shore; and as these grains when aggregated form impregnable defences against the restless surge of the breakers, so will the united voice and quiet action of earnest men build up a barrier, against which the dangerous waves of ceaseless innovation may roll and beat in vain. Let each preceptor, then, honestly discharge his duty, and let it be said, in high commendation of each, "*trahit quodcunque potest, atque addit acervo.*"

If each Preceptor will discard all hope of aid from sources to

which he has for a half century vainly appealed, the first step on the road to success in the management of this question will have been securely and happily made.

Let each Preceptor resolve to send his pupil to that school which has an ample corps of teachers, well known to science; with abundant clinical material, instrumental appliances, and illustrative facilities; with a term which is sufficient in length, for each teacher to honestly and fairly present at least the elementary subjects proper to his branch; with proof publicly furnished that the published, proper, and indispensable requirements for matriculation are really observed; where the course of instruction is not exclusively didactic, but where the class is, in part, daily examined; where the student is required, previous to graduation, to have attended two or more courses of lectures, in not less than two or more years; and above all where the Faculty of the school will not fear to cause each applicant, for graduation, to be examined before or after the Faculty-examination, by a Board of competent, prominent and distinguished Physicians.

If the Preceptors of America, will resolve to do this, and faithfully execute such a resolution, the standard of Medical education throughout the Country, will soon cease to be what it now is, confessedly unsafe and discreditable, and become a source of pride and satisfaction to the Profession. The Medical Schools will quietly and cheerfully respond to a demand which is so Catholic, in character and application, as to affect them all fairly and equally. Most of the schools will respond voluntarily, and those that are contumaciously wedded to their present opinions will yield to the iron rod of necessity.

The action of the Preceptors of the Country, is only wanted to establish this needed and desired reform, for no Professor would risk his reputation by stating that the present system is either excusable or defensible.

No teacher in the land can be found who will venture to say, that he can in four or five months (though not giving any time to clinical study,) present to the class, even the elementary subjects of his particular branch, and if he did, it is certain that no experienced Physician or Student would believe that he practically appreciated

or understood the importance of the duties imposed upon him. To attempt to examine even cursorily the elementary essentials of each branch, in this period, and yet devote any rational time to clinical observation, is so manifestly impossible, as to render a discussion of the subject a waste of time. Yet this system is continued throughout the Country, not because it is approved by any one, not because any one pretends to defend it, but because each school unsustained by State aid is afraid, by taking the initiative in elevating the standard for graduation, that it will drive students elsewhere and make vacant its Halls. Candid thinkers can not, and will not, blame Professors for this hesitation; as, has been well said, they are neither worse nor better than other esteemed members of that large Professional body to which they belong, and of which they are prominent and valued parts; their course is natural and will not be changed, unless by law or by decisive action on the part of the Profession.

It is possible in nine or ten consecutive months to teach didactically, to a student so much of the elementary essentials in each branch of medicine, as will enable him to pass a respectable examination, on the *theories* of his study, but this can only be done by devoting the whole of such a period to lectures, and, so arranging the time, that no material portion of it will be consumed in clinical observation and study.

To attempt to accomplish this result, during this period, if a portion of time be devoted to clinical pursuits, is to attempt an evident and palpable impossibility; but if the whole of the time is given exclusively to theoretical study, and the student goes elsewhere after graduation, to obtain the supplementary necessities of clinical experience and observation, it is reasonable to expect that fair Professional proficiency may thus be acquired, such proficiency being evidently due to the combined advantages of both systems, but affording no evidence whatever of the exclusive or independent results of either.

To give a diploma to any applicant, who may be able to respond to such an examination, as is generally given by American Colleges, without enforcing the requirements in regard to matriculation, and insisting upon two or three years pupilage, preceptorial and collegiate,

(collectively) is to still farther increase the dangers of Professional ignorance and inefficiency.

As is well known, one who is proficient frequently fails in an examination, and one deficient not unfrequently endures the ordeal successfully.

Unfortunate ignorance of the special subject selected, (though generally proficient otherwise,) timidity, momentary forgetfulness, etc., on the one hand, and assurance, temporary acquirement, good address, on the other are all elements in the logical analysis of this problem. Even admitting, however, an acknowledged fallacy, that examination is a test of proficiency, and it may justly be asked, why not still farther abbreviate the course of lectures, or, why should Colleges be expensively established and constantly supported? Why not abandon this expensive system, and establish a fully competent Board of Medical Examiners?

It surely is not pretended that private schools, lecturers and Practitioners, singly or collectively, can not prepare a student, at least as well as he is at present instructed, for graduation? A Medical College has other and equally high functions to accomplish.

The Public in addition to expecting that the Faculty will instruct, at least as well as do private teachers, has placed its members in positions entailing great responsibility, personal and Professional; has made them custodians to a great extent, of the Medical education of the Country, and has conferred, consequently, upon them extraordinary powers. The Public has the right, therefore, to expect and demand, commensurate returns; competent as instructors, and competent as examiners, that Faculties should, before granting the powers of the chartered seal entrusted to them, require, in addition to the unsafe or unjust test of examination, each student to furnish, through a rationally long period of pupilage, ample proof of proficiency in the elementary subjects of each branch. This can not be done in four months or in five, for all teachers admit that there is not an opportunity, in this period, of even presenting these subjects for examination, and that, therefore, in regard to the proficiency of the students, in necessarily omitted portions of each branch, (even if daily examinations are instituted) the Faculty must be entirely ignorant. Yet the seal of the College, testifying to

proficiency, is granted, when it is admitted that a material portion of each branch is omitted, both in the examinations of the lecture-room and in the examination for graduation. It is not pretended that the final examination has with each examiner special reference to portions of the course not reached, and there is therefore the evident conclusion of a chartered certificate being given relative to proficiency in subjects that were never taught or made the basis of an examination.

Examination, therefore, is no test of proficiency, but, even if it were, a Medical Examining Board could equally well institute this, and the Professional and general Public demand that Medical Colleges discharge faithfully also those equally high trusts and powers confided to them. They demand that the lecture-term be so lengthened that at least the elementary subjects of each branch may be presented to the Student; that the period of pupilage extend through the number of years required by reason and safety, and sanctioned by precedents, established in Countries, where the standard of Medical Science is best cultivated and most respected.

Unless the Preceptors of the land exact such a system, and support, through their Students, only such Colleges as will faithfully adopt it, there will be but a more rapid development of Empiricism—that recorded and material protest of a justly skeptical Public—the deadly Upas tree, that has already poisoned and contaminated the Professional soil.

In closing this hastily and imperfectly written article, an earnest appeal is made to the Practitioners of America, to withdraw by individual action, the controul of the great subject of Medical education from the well meaning Collegiate oligarchy, who, after a careful trial, have conspicuously failed to elevate or dignify it. The Medical Professors of America, have in their honourable and respected ranks, good men and great, but not great or good enough to subvert the old lesson of History, that self-interest stains the ermine of the Judge, and develops danger in the verdict of the Jury.

Let those controul the subject who are not similarly interested, then will the Medical Colleges of America, become well protected armories, in which true men are armed in mail for the Professional

Field, and not toy-shops for furnishing mimic weapons to those who seek only to travesty the triumphs of the great. Devoted, as this Journal is, exclusively and independently, to the progress and welfare of Medical Science, it will promptly and conspicuously indicate, to the members of the Profession the names of those Colleges which shall become Pioneers in this great work of improvement and reform.

NOTE.—On page 258, line 35, for "advantage," read advantages.

As in the Book Notice of "The Practice of Obstetrics by Dr. G. S. Bedford," the authors views, in some respects, are not correctly represented, a review of this valuable work will soon be given.

It is a source of satisfaction to be enabled to state to the supporters of this Journal, that the rapidly increasing subscription list, and the number of advertisements sent in for insertion, have already warranted the Publishers, in purchasing type and press, and in establishing an independent office of publication. These new arrangements, have delayed, for a few days, the issue of this number. The Journal will be published on the first of each month.

In alluding to the publication of the Savannah Journal of Medicine, reference, by a typographical error, was made to Dr. Read's case of excision of the knee-joint, when the word hip-joint was intended.

In the article in the February number on cholera, by Dr. Houston, for the word "use," page 120 line 35, read cure.

An impression from four separate stones, was necessary to complete the coloured plate in this number. Messrs. Ludwig and Keatinge, the lithographers, are prepared to do such work as well, and as economically, as it can be done in America, and after careful observation, there is no hesitation in specially commending them to the confidence of the public.

NOTICES.

According to the published terms of this Journal, all subscriptions made prior to the 1st of January 1866, will be doubled, if unpaid by the last of March.

The undersigned, has usually on hand a considerable surplus of VACCINE VIRUS, which he will take pleasure in distributing among his *professional brethren*. Each application should contain the name and address of the Physician, *plainly written*, and two postage stamps; one for prepayment of postage, and the other for stationary and the services of an employee.

The virus offered for distribution, has been cultivated by the undersigned, for more than two years, and has never failed to afford complete protection, so far as his observation has extended. It is now in a very active state; no failure having occurred in his own practice during the past three months. The crust is almost always ready for removal on the fourteenth day. In the coldest weather of Winter, it occasionally holds on until the fifteenth or sixteenth day, and in Summer it occasionally drops on the thirteenth or twelfth. The substance of the crust is homogeneous, soluble and free from fibrous tissue. The cutaneous ulcer is superficial and heals readily.

JAMES BOLTON, Richmond, Va.

MATRIMONIAL.

MARRIED, in New York City, on Tuesday, February 6, by the Rev. George H. Houghton, THOMAS F. COCK, M. D., to LOUISA DE FOREST WOODRUFF.

MORTUARY.

BUCKLER, JOHN M. D. In Baltimore, Md., February, 1866.

WASHBURN, S. D. M. D. At the Seaman's Retreat, N. Y., February 20th, 1866.

COOLIDGE, R. H. M. D., Surgeon U. S. A. At Raleigh, N. C., February 22d, 1866.

OBITUARY.

DIED, at Roslin, the residence of his father, in Brunswick County, on the 25th instant, in the 28th year of his age, Dr. G. WELDON CLAIBORNE, formerly of this city—lately Assistant Surgeon in the late Confederate States Navy.

The deceased entered the late Confederate Army as a private in Captain John P. May's Company, and left Petersburg, on the ever memorable 20th of April, 1861, with the Fourth Virginia Battalion, for Norfolk. In the fall of that year he was transferred to the cavalry; and during the subsequent year, promoted to the position of Assistant Surgeon, with the rank of Captain and placed in charge of the Second Battalion First Regiment Virginia, Artillery. In the Summer of 1863, he was transferred to the Navy on examination, and ordered to Mobile, as Medical Officer in charge of the gunboat "Huntsville." He remained on duty in Mobile Bay, to the close of the war, his vessel bearing a conspicuous part in the defence of the city, and finally escaping up the river on the fall of the post. It was finally surrendered by command of General Dick Taylor, on the "Tombigbee," and the men and officers paroled. Dr. Clairborne, however, did not reach Virginia for several months after, and then bringing with him the seeds of a mortal disease, contracted in the service.

It does not become the author of this notice, to speak of his worth. His virtues are left to the memory of his friends, and his brave, genial, generous spirit, will not soon be forgotten by the companions who survive him.

Thus, one by one, the army is mustered out, and the names of its soldiers transferred to the book of the Black Sergeant—Death! When the last Long Roll is called, and the Arch-Angel shall marshal the dead before God, let us hope that each will stand up with joy, and re-echo the glorious words: Adsum, I am present.

C.

DIED, at his residence in Williamsburg, Virginia, on the 19th of December, 1864, SAMUAL STUART GRIFFIN, M. D., in the 83d year of his age.

Dr. Griffin, was a gentleman of a high order of intellect, and of the most finished education, received from American and European Colleges. William and Mary, and the Medical Department of the

University of Edinburgh, were his *Alma Matres*. Possessed of fine literary and classical attainments, he was an elegant and forcible writer.

For more than fifty years he was a Practitioner of physic, and his patients remember with feelings of obligation, his kindness and medical skill. Shortly after his return to Virginia, from the University of Edinburgh, he, in association with his uncle, the eminent Dr. Corbin Griffin, commenced the practice of his profession at Yorktown, Virginia; thence he removed to Gloucester. After practising, for a number of years, in that ancient County, he removed to Williamsburg in 1823, where he prosecuted his benevolent avocation for many years, with marked ability and philanthropy. One of the most conspicuous attributes of Dr. G., was an unvarying cheerfulness and equanimity of disposition. This quality, coupled with great skill, rendered him peculiarly popular in the sick room. His cheerfulness was a very cordial to his patients; and all his surviving friends will cherish, with affectionate appreciation, the amiability, integrity and excellency of his character! "*Olim meminisse juvabit.*"

He was a devout and practical believer in the sublime and glorious truths of Christianity.

J. L. C. G.

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ILLUSTRATIONS OF SIR WILLIAM FERGUSON'S LECTURE

Fig 6



Fig 4



Fig 1



Fig 11



Fig 12



THE RICHMOND MEDICAL JOURNAL.

APRIL, 1866.

ART. 1.—*The Therapeutic Effects of the Ligation of Large Arteries.* An Essay read before the Montgomery County (Tenn.) Medical Society, January 8th, 1866. By DANIEL F. WRIGHT, M. D., late Professor of Physiology and Pathology in Shelby Medical College, Nashville; subsequently Surgeon in the Provisional Army of the late Confederate States.

[PUBLISHED AT THE REQUEST OF THE SOCIETY.]

It is much to be hoped that the formation of Medical Societies throughout the States, late called Confederate, will do something towards compensating for the great scientific loss, incurred by the Profession through the sudden breaking up of the Medical Department of the late Confederate States Army, and the loss of its voluminous records.

The numerous practitioners who have held commissions, as medical officers in that army, and who are now again occupied in the civil practice of their Profession, will, through such channels, have an opportunity of laying before the Profession such enlarged stores of information and such novel trains of thought, as the casualties of a great war cannot but have supplied. It is true, that such desultory statements as these will furnish a very poor substitute for the digested reports of the whole army, such as would have emanated from the Surgeon General's office had the termination been other than what it was; but their imperfection would be a poor excuse for withholding them, if any new principle in surgical pathol-

ogy, or any improvement in operative procedure, should seem to be derivable from them. I am myself able to give a detailed statement of only three out of the five cases occurring under my own observation, upon which, the views I shall presently state are grounded; these may, however, be considered as typical of the rest, and, moreover, are confirmatory of six other cases reported by my friend, Surgeon H. F. Campbell, of Augusta, Ga., and I feel myself justified, without further preface, in proceeding to the consideration of my main subject.

Few operative procedures could be supposed likely to produce more striking changes in the condition, whether physiological or pathological, of a part of the body, than that of suddenly cutting off the supply of blood which it receives through its principle arterial trunk. The effects of this process upon a member, in its physiological condition, have been minutely described in most systematic works, on both physiology and surgery, and will not at present concern me, though I shall have to dwell upon some of them when I discuss the rationale of its influence upon various pathological conditions.

This latter will be the main subject of the present paper, viz : *The influence upon the pathological conditions of a part exercised by ligating its principal artery.*

My attention was first specially directed to this subject by the gentleman already alluded to, Dr. Campbell, of Georgia, who had, early in the history of the war, been placed in charge of the hospitals for Georgia volunteers, established in Richmond, Virginia.

From his experience in this capacity, he had derived some opinions in regard to the effects of ligation upon gangrene, opposed to those usually entertained, which he presented to me in private conversation, when I was on the eve of a visit to Europe, in the spring of 1864; being desirous, as he said, to have them laid before such European surgeons as I might meet with. I will add that I had, when in London, the satisfaction of discussing them with Mr. Erichsen, the eminent Professor of Surgery in the Royal College of Surgeons, who listened to them with much apparent interest. Dr. Campbell has since embodied them in a work on military surgery, published under the auspices of the late Surgeon General, a copy

of which I have before me, but as they are only incidentally touched upon in that work, I should not have appreciated their importance had I not heard him *viva voce* on the same subject.

The new doctrine amounts in substance to this : that the ligation of the principal artery of a member, which is ordinarily supposed to occasion danger of gangrene and necrosis in the parts supplied by the occluded artery, has, on the contrary, a marked therapeutic influence, not only upon tumefaction and unhealthy discharges, and indolence in the healing process, but especially upon gangrene itself, which repulsive and dangerous disease it has uniformly and promptly arrested in every instance in which it has been applied. This doctrine is sustained by the history of six cases, for the particulars of which I must refer to the work in question.

I had no opportunity of making this question the subject of my own personal observations until my return from Europe, when I was placed in charge of the second division of Winder Hospital, Richmond, the largest establishment of the kind in the late Confederate States.

CASE 1.—*Private J. P.*, of the 2d North Carolina cavalry, was wounded in one of the engagements before Petersburg ; brought to the hospital the next day. He had a flesh wound made by a minie ball, which had entered at the upper and anterior portion of the vastus internus muscle, and made its exit a little higher through the flexor muscles of the thigh ; the ball had evidently, therefore, traversed the tracts of the femoral artery, in the middle third of the thigh. At the time I first took charge of this case the wound was in a fearfully gangrenous condition, a state of things, I may say, which was then very general, the hospital being crowded with the wounded, and the weather excessively sultry. An immense portion of the extensor muscles of the thigh had sloughed, and the arterial tract was, for several inches, exposed.

On the 27th August, profuse hæmorrhage took place from the femoral artery, which was happily arrested by vigilance of the attendant, and I was immediately called. A compress had been applied at the seat of the injury by the Assistant Surgeon in charge ; the patient was pale, with an anxious face, feeble pulsation, and his whole body suffused with a cold sweat. I directed a

powerful stimulus, and, when the pulse had a little recovered its tone, had chloroform administered, applied a tourniquet to the artery, as near the pubis as could be effected, cut down upon the artery at the lower angle of Scarpa's triangle, ligated it at that point, and closed the wound.

Ordered nourishing diet and stimulants freely administered.

The injured limb was, for some days, slightly colder than the other, notwithstanding which, the condition of the wound commenced improving from that day. By September 2nd, or six days after the operation, the fetid ichorous discharge had been replaced by a rich creamy suppuration, and, by the 4th, granulations were healthy and abundant. From that time the healing process was rapid, and in about three weeks the man was furloughed.

CASE 2.—*Sergeant P. B.*, Company A, Forty-eighth North Carolina regiment, was wounded August 25th, 1864, by a musket ball, which shattered the middle finger of the left hand. Amputation had been performed on the field by Surgeon Montgomery, of his regiment—the head of the metacarpal bone being included in the operation. This was on the evening of the 26th, and the next morning he arrived at the hospital. Gangrene set up immediately, the ravages of which were so rapid that by the 29th a large portion of the palmar integuments had sloughed away and profuse hæmorrhage set up from the palmar arch. This was arrested by forcible flexure of the forearm on the humerus.

August 30th.—Hæmorrhage recurred, when I resorted to ligation of the brachial artery, in the lower third of the humerus. Improvement in the wound commenced in this case, also, from the day of the ligation; healthy suppuration occurred September 2nd, (third day.)

September 3d.—Improvement considerable, granulations commencing at various points.

September 4th.—Erysipelatous flush supervened along the ulnar surface of the forearm. At this time special wards had been established in the hospital for the treatment of erysipelatous and gangrened patients; consequently he was removed from my immediate superintendence, but I frequently visited him in the gangrene wards. The erysipelas unfortunately soon assumed a phlegmonoid

character, and very extensive sloughing of the integuments of the forearm resulted. What was very remarkable was, that this unfortunate occurrence in no respect interrupted the healing of the original wound, which advanced so satisfactorily that by the time the erysipelatous action in the forearm had given way to incipient granulations, the reparative process in the hand had become complete.

CASE 3rd.—*Private M. C.*, Company I, 61st North Carolina regiment, wounded July 30th, 1864, sent to hospital the next day.

July 31st.—Gun-shot wound, point of entrance being in the centre of the rectus femoris at the lower third of the thigh; exit on its antero-interior side, just where the femoral artery passes beneath the adductor tendon; wound already gangrenous.

August 2d.—Gangrene rapidly advancing, highly phagedenic in its character. Arterial hæmorrhage at 2 P. M.

August 3d.—Renewed hæmorrhage at 8 A. M.

[So far the case had been treated by Assistant Surgeon Muldrow, who had held the hæmorrhage in check by a compress bound firmly over the seat of the wound.]

I now took charge of the case. The sloughing from gangrene had advanced considerably above the original seat of the wound, and penetrated deeply through the substance of the extensor muscles, extending down to the septum, which separates them from the flexors.

I was considerably perplexed as to the treatment to be resorted to. In the first place, I was not satisfied whether the hæmorrhage was from the femoral artery, or from some of its deep muscular branches; then, the tissues were so disorganized as to present a most discouraging task to the surgeon who should grope among them for the purpose of ascertaining the true nature of the lesion.

3 P. M.—I continued the compress till 3 P. M., by which time it became evident that this remedy was aggravating the gangrenous action. At the same time, I could not reconcile myself to removing it, without substituting some means of preventing future hæmorrhage, the recurrence of which would, I was satisfied, prove fatal to the patient. I therefore determined upon an exploratory incision, with the purpose of operating "*pro re nata*."

I should mention, that at this time no pulsation could be felt in the groin of the injured side, though it was very strong on the other side, which led me at first to suppose that the entire artery might be obliterated by inflammation.

Operation.—I threw a tourniquet around the limb, pressing upon the seat of the artery, as near the pubis as could be effected. Then the dressings were removed from the wound—no hæmorrhage followed; the tourniquet was gradually relaxed, and finally removed, without hæmorrhage following; pulsation still absent in the groin; cut down through the diseased tissues to the artery, which was found flaccid and lacerated, though, whether this was the effect of the original injury or of the phagedenic gangrene, there was no means of determining. All the surrounding tissues were in so advanced a state of decomposition as to be entirely undistinguishable, nor was I satisfied, until further pursuit of the operation, that it was the artery at all which I had found; artery or not, it would evidently not do to tie it then. I accordingly made a careful dissection, tracing its course upwards till I arrived at healthy tissue; then continuing the incision about an inch and a half further, arrived at the inferior angle of Scarpa's triangle, where I ligated the artery, in which, however, no pulsation could be detected; I then closed the wound, applied poultices to the gangrened portion, and aroused the patient: ordered stimulating and sustaining diet.

The duties of a military surgeon, in charge of large numbers of wounded, are always laborious and harrassing, and perpetually impose responsibilities, painfully burdensome to a conscientious officer, and I do not think that I ever felt the weight of my responsibilities so oppressively as in this case. The absence of pulsation was especially a source of anxiety to me, as I could only account for it by supposing, that the inflammation had extended so far as to obliterate the cavity of the artery in its whole length. It will soon appear that I was mistaken in this supposition, and with my present views of the effects of cutting off arterial supplies, I should not deem it so threatening a circumstance if it had been so.

I proceed with the history of the case:

August 4th.—Appearance of the wound somewhat healthier; pulse and general appearance improved.

August 5th.—Appearance still improved, strength renewed, pulse fuller. Phagedenic action had apparently ceased entirely.

August 6th.—Healthy pus discharged freely, improvement continues.

August 7th.—Pulsation perceptible in the groin for the first time since the third.

During this time, the parts already gangrenous had been sloughing off, and around the edges of the cavities thus left, granulations rapidly made their appearance, and soon after at various points in the bottom of the cavities. The wound healed more rapidly than any lesion of such extent that I had ever witnessed. The ligature came away on August 13th, or ten days after the operation, and in less than four weeks the man left on furlough, strong, healthy and with his wound entirely healed.

Though it is rather a digression from my main subject, I will pause here to say a few words about the long continued cessation of pulse in the artery from the seat of lesion up to Poupart's ligament. I think that the great contractile force of wounded arteries, is a thing but inadequately appreciated by systematic writers. When we consider the great force with which the blood rushes through the great arterial trunks, it is evidently a very powerful effort of the contractile elements in the arterial coats, which is required to resist the impetus of this stream, as in the present case, for four days.

I have preserved the records of a case in which this contractile resistance to hæmorrhage was manifested at a point still nearer the centre of circulation, and in which, unfortunately for the patient, we had to witness several alternations of contraction and relaxation, each relaxation being attended by profuse hæmorrhage before the termination of the injury in death.

CASE 4.—*A. E.*, private Company K, Forty-ninth North Carolina regiment, was brought to the 4th Division of Winder Hospital July 30th. He had been wounded in the trenches, the same day, with a minie ball, which entered just in front of the trochanter major of left thigh, passed through the anterior muscles of the limb, through the root of the scrotum, and then grazed the anterior surface of the right thigh; its direction was transversely

through the upper part of the thigh, &c., ranging from behind forwards and a little upwards. Profuse hæmorrhage had taken place on the field, which was repeated in the hospital on the 5th, 6th and 7th, on the afternoon of which latter day he died. I was not called to him till after the hæmorrhage on the 6th, when his vital powers were reduced so low, that an operation, such as alone could have arrested the hæmorrhage, was out of the question, the wound having been too high for anything short of ligating the external iliac.

The intervals of arterial contraction between the hæmorrhages in this case were as follows: Interval between first and second hæmorrhage, six and one-half days; between second and third, seventeen hours; between third and fourth, twenty-two hours; between fourth and death, six hours.

On a post-mortem examination, it was found that the artery was much lacerated a little below its emergence from Poupart's ligament, but not entirely cut in two.

To return to our main subject: These are all the cases bearing upon the topic of this paper, of which I have authentic records. I have mentioned that I witnessed two others, in which arteries were ligated with a similar result; but, as they did not occur under my direct superintendence, the notes of them are included in the general report of the hospital, and do not occur in my private notes. I can only state generally, therefore, that the brachial artery was tied in both of them, with a result exactly similar to that in the cases already detailed—namely, the rapid amelioration of a morbid condition, previously existing in the wounded member, supplied by the ligated artery.

To speak in general terms, then: In the five cases witnessed by myself, and in the six cases reported by Dr. Campbell, we have this one uniform result—that immediately from the date of ligation, large tumefaction has been superseded by recovery of the original contour, fetid ichorous discharges by laudable suppuration, and phagedenic gangrene by vigorous granulations, resulting in rapid separation of the eroded tissues. And I would impress upon the Society, that these were not select cases, constituting a small percentage, or even a large proportion of the instances in which the antecedents were similar, and leaving a drawback of another certain

per centage, in which the same antecedents were followed by different consequents. No, these cases comprise *all* the instances in the practice of Dr. Campbell and myself, in which the artery was ligated which supplied a member affected with gangrenous or otherwise morbid wound ; and in *all* the same results followed.

It remains to be considered what are the practical inferences to be drawn from the facts thus detailed. If the cutting off the arterial supply be such an energetic remedy for gangrene, and the other events of inflammation, the question arises whether the procedure should not be adopted expressly for this therapeutical purpose. In all the instances I have given, though the ligation resulted in curing the gangrene, it was not resorted to for that purpose, but for that of arresting hæmorrhage. In the present state of professional opinion, it would be bold surgery, savouring perhaps, of rashness, to tie the brachial artery for gangrene in the hand, or the femoral for phagedenic erosion in the calf of the leg. Though my friend, Dr. Campbell, does not stop short of advocating this very procedure, I am not prepared, at present, to go these lengths, but I am satisfied that a surgeon would be justified in resorting to it, who should have a patient who was suffering under phagedenic gangrene, say in the lower part of the thigh, which threatened to involve the femoral artery in its erosive career. In such a case, I say a surgeon would be justified in anticipating this catastrophe, in not waiting for the dangerous hæmorrhage, but tying the artery at once. I should do so myself, and afterwards, look with confidence for an early amelioration in the condition of the wound.

The cases, however, on which the opinion is grounded, are only eleven, as yet, and most men would be desirous of more extended observation before making any practical inference. The most conservative and cautious of surgeons, however, would, I think, assent to this proposition that the cases already recorded, afford quite sufficient ground for further observation. It will I think be conceded by all that every instance in which, for any purpose whatever, the artery is tied which supplies a gangrenous limb, the results ought to be carefully noted, recorded and published, in order that it may be seen whether future experience is in harmony with what has been herein stated.

ART. II.—*Epidemic Cerebro-Spinal Meningitis*. By R. P. VEST, M. D., Richmond, Va.

I propose to give a history of a very fatal epidemic, of *Cerebro-Spinal Meningitis*, which manifested itself, for the first time, in the Engineer Camp, on the Nine Mile road, five miles from Richmond, Va., during the last week in November, 1864.

The first four or five cases ran a fearfully rapid course, terminating in death, in the course of six to twelve hours after the first symptoms of sickness. The symptoms, in these cases, were vomiting, cold extremities, no pulse at the wrist, delirium, mingled with drowsiness, dilated pupils, partial blindness, difficulty of speech, soon followed by coma and death. My first opinion of these cases, (concurrent in by several medical friends, both Surgeons and Practitioners, who saw some of the cases with me) was, that they were cases of poisoning.

The Physician who had charge of the camp, and who sent all cases to the city, as soon as they were considered sick enough to enter the hospital, informed me that the first symptoms complained of, were pain in the head and bowels, a sense of weakness of the knees, rapidly followed by the symptoms above enumerated. A majority of these first cases were seized at night, being apparently in perfect health on the previous day, and were sent to the hospital in the morning in a moribund condition. In order to discover the cause of death, I visited the camp, examined the location, enquired into the method of cooking, amount of rations, general habits of the negroes, &c., but failed to elicit any information, except some vague statements, that some of the men had been seen eating various kinds of berries growing in the adjacent fields. I then commenced a series of post-mortem examinations, which revealed the fact that the true cause of death was a disease of the spinal cord and brain, known as *cerebro-spinal meningitis*.

Every effort was made by the Engineer officers to arrest the progress of the epidemic. The camp, at which it chiefly prevailed, was removed to a more elevated location, comfortable huts were built for the negroes, their rations were increased, and whiskey was

allowed each man once a day. I had several interviews with Brig. General Stevens, of the late Engineer Corps, in reference to the mortality amongst the negroes. All other means having failed to arrest the disease, he, at my suggestion, broke up the camp, and as the exigencies of the service prevented his sending all the hands home, he sent a portion of them to Petersburg, and a portion to Drewry's Bluff. No case occurred, within my observation, amongst these men, after the adoption of this measure; but I think it probable that some cases occurred amongst those who left the infected district. Some few cases were received at the hospital from Chaffin's farm subsequent to this time.

But little is known of the real cause of this disease. It has prevailed, as an epidemic, at various times and places. It is said to have occurred at Bowling Green, in the winter of 1861-62, and in the succeeding winter, it made its appearance at Grenada, Miss., among the negroes employed upon the fortifications, and also among plantation hands in the adjoining Counties. It was observed by Dr. G. A. Moses, in Mobile, in the Winter of 1863-64, confined almost entirely to the blacks. "Some cases occurred among the citizens, principally in children." I have been informed by a medical gentleman, from Franklin County, Va., that the disease has prevailed in that locality.

I observed it only amongst the male blacks; usually the young and most robust. I have seen two cases in private practice—the patients having had no communication with negroes employed on the fortifications. My own observation induces me to believe that it is not contagious. After the first week of its appearance some recoveries began to occur, the fatal cases lived longer, the symptoms were milder, and rather different from those observed in the first cases.

The disease is sometimes ushered in with chill, more frequently with headache, pain in the neck, and along the whole course of the spine, stiffness of the jaws, sometimes amounting to *trismus*, pains in the bowels, and constipation. When the disease is fully formed, delirium occurs, sometimes wild and furious, more frequently alternating with stupor; the pulse is small, feeble and slow, sometimes frequent; skin seldom above the normal temperature, often

below it; the tongue becomes dry, hard and fissured; the pupils of the eye are dilated, or inactive, or more rarely contracted. Perhaps the most striking and characteristic feature of this disease is the rigid spasms of the muscles of the spine, drawing the head stiffly backwards, and sometimes rendering the body almost as rigid as a board. Should a favorable change not take place, coma, and sometimes paralysis, terminates the case. The mean duration of the fatal cases may be stated at from three to five days; some cases sink into a low typhoid condition, and run on from two to three weeks.

My post-mortem examinations revealed unusual vascularity of the brain; *dura mater* healthy; upon the removal of this, the hemispheres are seen dotted over with patches of greenish lymph, between the *arachnoid* and *pia mater*; ventricles more or less filled with turbid serum; in most cases the ventricles were more or less dotted with this same lymph deposit. At the base of the brain this deposit of greenish lymph was much more abundant, especially over the *medulla oblongata* and *pons varolii*. In two of the cases, where the patients lived eight days, the base of the brain was a mass of lymph, with some pus around the *medulla oblongata*. The spinal cord, in all the cases examined, was more or less invested with the same lymph deposit. In those cases, in which the patients died in a few hours, the lesions were not so well marked, but sufficiently so to account for death. All the other organs were found healthy—mucous coat of the stomach slightly injected in a few cases.

Very discouraging opinions are expressed by writers, of the prognosis of this disease. Dr. R. L. Scruggs, in a paper published in the January number of the "Medical Examiner," of 1849, says: "I must candidly confess that I have never seen a case recover." Dr. G. A. Moses, Mobile, Ala., in an interesting paper in the "Confederate States Medical and Surgical Journal," August number, 1864, makes a similar statement. He says: "I have heard of but five reported recoveries, and have seen none." Other practitioners lost from sixty to eighty per cent. of their cases. Judging from my experience, I think that cures may be effected in many cases by prompt and energetic treatment. From the 24th of

November, 1864, to 1st January, 1865, sixty-two (62) cases of this disease were received into my hospital, twenty-three (23) of whom, were in a moribund condition. Out of the whole number, twenty (20) recoveries took place, which averages the mortality at about sixty (60) per cent. It is proper to add, that many who died were received too late for the application of effective measures for their relief.

After the trial of various remedies and plans of treatment, I found that the local abstraction of blood, by cups to the back of the head and along the whole course of the spine, together with the rapid introduction of mercury, both by the stomach and by the inunction of mercurial ointment, has proven more successful in my hands, than any other mode of treatment.

My plan is to commence the treatment by taking from twelve to fourteen ounces of blood, by cups, from the back of the head, neck, and along the course of the spine, repeated once or twice in twenty-four or thirty-six hours, if the pulse and general strength will permit. I have not been deterred from this copious depletion by cups, because of a small and feeble pulse. In numerous instances the pulse has risen under this abstraction of blood. In twelve or fourteen hours after the last cupping, I order a blister to the *occiput*, and one along the whole course of the spine. I usually order calomel, in five or eight grain doses, every three hours, and if the bowels are obstinately constipated, combine with it one or two drops of *Ol. Tigllii*, until they are freely moved. The calomel is then continued in small doses. At the same time mercurial ointment is rubbed on the inside of the arms and legs three times a day. When the attack is accompanied with much febrile excitement, tartar emetic, in quarter grain doses, in combination with the calomel, has been found beneficial.

I find an unusual insusceptibility to the constitutional influence of mercury in this disease; very few cases having been brought under its influence, though I have used it with an unsparing hand. After the first few days this treatment must give place to the cautious use of stimulants and tonics with a nutritious diet.

In this stage of the disease, I have found great benefit from

Ammon. Muriat, in 10 grain doses, every four hours, with 3i Tr. Cinchon. Co. I have also used oil of turpentine, where the tongue was dry, with apparent benefit.*

ART. III.—*A Simple Interdental Splint.* By JAMES BOLTON, M. D., of Richmond, Va.

The interdental splint described by Dr. Covey, in the February No. of this Journal, appears to me to approximate perfection as nearly as we are likely to reach. The means of preparing it, however, are not always at hand. The splint hereafter described has the advantage of greater simplicity; of fulfilling the indications in a similar, though less perfect manner, and may be always within reach of the surgeon. A case of gun-shot wound of the lower jaw came under my care during the late war.† The ball struck the right side of the lower jaw, just anteriorly to the first molar tooth. Some pieces of bone had exfoliated, and it was probable that other pieces would follow them.

I took a piece of gutta percha about an inch in thickness, and about two inches in length. I then worked it in hot water, so as to form flanges on each side, about one quarter of an inch in height. The piece was shaped into the form of a letter "H," with a very thick cross or connecting piece; or it may be compared to a "T" or "H" iron bar of a railroad, laid on its side. Having softened by heat the upper and lower surfaces of the gutta percha splint, I placed it between the teeth of the upper and lower jaw, pressing the teeth into it, so as to form sufficiently deep indentations. The flanges lapped over the upper and lower teeth on their outer and inner surfaces, and were gently pressed against them. Holding the parts in position accurately, for a short time, I removed the gutta percha, and threw it into cold water. I then placed it again between the teeth. On the outside of the jaw, I moulded a piece of gutta percha plate about one-sixth of an inch in thickness. Through this

* The last case of this disease was admitted to the hospital on the 27th December, 1864.

† My notes of this case were unfortunately lost or destroyed.

plate I cut an opening of sufficient size to allow a free exit of pus, and of pieces of exfoliated bone. Over all this, I placed a four-tailed bandage, which held everything in place very firmly. The patient left the city, and I did not see him again until the expiration of about eight months. A careful examination, at this period, revealed a most complete and satisfactory cure. The ends of the bones had united firmly, and were most accurately in position; there was no deformity, and the functions of the jaw were admirably restored.

It will be perceived, that the teeth fitting accurately into the indentations upon the surface of the gutta percha, prevented the motion of the fragments, and that this was still further accomplished by the flanges, which were moulded upon the vertical surfaces of the teeth, and were pressed into their interstices. The upper and lower teeth, being kept apart a distance of about a half inch, permitted the free use of liquid food. The patient was able occasionally to remove the whole apparatus, to cleanse it and the mouth thoroughly, and then to replace it.

MEDICAL AND SURGICAL RETROSPECT.

- 1.—*On the Efficacy of Sarracenia Purpurea in Arresting the Progress of Small-Pox.* By J. TAYLOR, M. D., Old Kent-road, London.

[Dr. Taylor has employed this remedy very extensively, and considers that its utility is unmistakable.]

The following is the formula employed:—Two ounces of the sliced root; three pints of water, boiled in a closely covered vessel, down to two pints, and strained. The first case was a little girl, six years of age. She was seen on the third day of the eruption, of primary small-pox, and immediately began to take the decoction—four ounces per diem in divided doses; and in less than twenty-four hours the mother reported “she had been better ever since she began to take the medicine.” The eruption was very extensive, pustules large, and in some places confluent. The case advanced apparently without interruption, until the seventh day, when the pustules began to shrivel, and on the eleventh day the disea-

cated scales had nearly all fallen off; no pitting; patient convalescent. Every succeeding case was treated in the same manner, and with the same success. Only two cases perished; one an infant, three weeks old, who took it from its mother; the other, an adult female, who seemed to sink from pyæmia, on the third day of the eruption.

One remarkable fact, however, deserves to be recorded. A poor woman brought her child, a year and a half old, to my surgery one night, at eleven o'clock, with the eruption of small-pox, which had on that day made its first appearance. I gave her the decoction, with directions to give a dessert spoonful four times a day. On the fourth and eighth days, her visits were repeated, each time speaking in laudatory terms of the efficacy of the medicine. On the eleventh day of the eruption she made her last visit, making at the same time the following pertinent remarks: "I have called to thank you, sir, for your great kindness. My child is now quite well; all the scabs have fallen off, and the skin has not a blemish on it. That medicine must be very valuable, sir; for a little girl, the daughter of one of my lodgers, caught the small-pox three days before mine did, and it has not changed a bit; the pock is all over the body yet, in great mattery heads, and here is my child with her skin nearly as clean as when she was born." I was somewhat incredulous as to this perfect clearance of the skin; but in half an hour she brought the child for my inspection, and the appearance fully corroborated all she had said. She had not been vaccinated.*

2. *Two Cases of Small-Pox Successfully Treated by Sarracenia Purpurea.* By WM. HENDERSON GRANT, M. D., Aberdeen.

I quote extracts from two letters from my brother: "I am giving a small-pox patient the *sarracenia pupurea*,† in infusion. I commenced it yesterday. The eruption appeared four days ago, and is very abundant—a sort of semi-confluent variety, not very serious, but not by any means slight. In answer to my inquiry to-day, how he felt, (I was anxious to know the *immediate* effects, if any, of the *sarracenia*,) he said he was quite well in health. He is placed in very unfavorable circumstances—a miserable little place of an attic inhabited by three persons." In a note that I received a day or two later, he says: "My small-pox case has quite recovered. The *sarracenia* seems to have some specific action, although most M. D.'s say it is a hoax. I gave it to this man upon the fourth day of

* Though it is not probable that there is any specific value in this agent, it is, from such relative testimony, at least worthy of a fair trial.—Ed.

† See Wood and Bache's Dispensatory.

the eruption, up to which time the disease had progressed exactly in the ordinary manner, the vesicles containing clear lymph; but here they were arrested, they never went on to suppuration, and there was no odour perceptible. Prior to his getting the infusion, he complained much of restlessness and sleeplessness at night, but after he commenced taking it, he slept well. On my last visit, instead of finding symptoms of feverishness, I found him sitting by the fireside, telling me that he 'was quite well, but just not so strong.'"

To give the particulars of my own case, would be to repeat a good deal of the substance of the above. The patient, aged twenty-five, was a man of a very full, plethoric habit. The symptoms were severe, and the eruption very abundant, quite of the confluent form on the face; the mouth and fauces were also covered. To extreme restlessness and sleeplessness at night, was added pretty smart delirium. The patient commenced taking the infusion on the afternoon of the fifth or sixth day. Relief was almost instantaneous; he slept soundly during the succeeding night, and had no more delirium. When I inquired for him next day, he replied that "he had felt quite easy since I gave him that *stuff*," indicating the infusion. He continued rapidly to improve, and is now recovered.

[*Lancet*.]

3. *On the Treatment of Certain Forms of Epilepsy by Bromide of Potassium.* By ROBERT McDONNELL, M. D., Surgeon to Jervis Street Hospital, Dublin.

[The object of this paper, is to draw the attention of the Profession to the use of bromide of potassium as a remedy in certain cases of epilepsy. When the cases are properly selected it is a remedy of much efficacy. Sir Charles Locock, Dr. Brown-Séquard, and Dr. C. Bland Radcliffe, have already recommended its use.]

Dr. Radcliffe says:—"I can testify that this remedy has proved, more or less, serviceable in cases the most dissimilar in character; so serviceable that the name of Sir Charles Locock ought to be remembered with gratitude by every epileptic, and by many suffering from other forms of convulsive disorders."

Sir Charles Locock, writing in 1853, says:—"About fourteen months ago I was applied to by the parents of a lady who had hysterical epilepsy for nine years, and had tried all the remedies that could be thought of by various medical men, myself among the number, without effect. This patient began to take bromide of potassium last March twelve-month, having just passed one of her

menstrual periods, in which she had two attacks. She took ten grains, three times a day, for three months; then the same dose for a fortnight previous to each menstrual period; and for the last three or four months she had taken them for only a week before menstruation. The result has been that she has not had an attack during the whole of this period. I have only tried the remedy in fourteen or fifteen cases, and it has only failed in one, and in that one the patient had fits, not only at the time of menstruation, but also in the intervals."

I have learned from Dr. Brown-Séquard, who has used the bromide very extensively, that he also entertains the highest opinion of its efficacy. For my own part, being full of scepticism with regard to the utility of many drugs, much boasted of, and not, I must own, being rendered less sceptical by the large per centage of cures effected in the fourteen or fifteen mentioned by Sir Charles Locock, I commenced using the bromide without being very sanguine as to success. I now confess, that I have found it, in some cases, a drug of remarkable efficacy, although not so powerful in altogether stopping the attacks as it has been in the hands of Sir C. Locock.

[Several cases are then related, and the writer thus continues:]

These and other similar cases lead to the belief that we have in the bromide of potassium, a remedy of considerable efficacy in epileptiform disease, when connected with uterine derangement. But in urging my professional brethren to use it in such cases, I would say that it certainly will not be found successful in every case, even of epilepsy, connected distinctly with menstrual derangement. I have administered it, with the consent of my colleague, Dr. Ranon, to a young woman in the Mountjoy Female Convict Prison, who had puerperal convulsions at the birth of her first child, and has since been epileptic, her attacks occurring, for the most part, at the menstrual period. In this case, although I expected much from it, I cannot say that any substantial benefit has arisen from its use, yet it has been given perseveringly, and in large doses.

With reference to the dose, from a not inconsiderable experience in the use of this medicine, I can state that it may be given with perfect confidence and safety, in much larger quantities than it is usually prescribed. I have given thirty or forty grains, and even more, three times a day, for months, without observing any bad results; and of this I am certain, that often such a dose as ten grains, three times a day, is too small to develop any good result.

Although the independent testimony of several practitioners points to cases of epilepsy, with derangement of the uterine func-

tions, as those in which the bromide of potassium is most likely to be beneficial, yet there are others in which its effects are unquestionably good.

A lad, aged eighteen years, was admitted to the hospital of the Montjoy Convict Prison, on April 12th, 1863. He was said to be epileptic, having three or four fits in a day. I myself never saw him in one; but at the time of my visit, I found him dull, stupid, and slow of speech. I was struck by the peculiar odour exhaled from the skin of the patient: it was the same mixture of garlic and brass noticed in a former case; and it was the similarity in this respect alone that suggested to me the idea of giving him a medicine which had been so useful in the case alluded to. I commenced with ten-grain doses of the bromide three times a day, increased after one week, to fifteen, and in a fortnight to twenty grains. This boy apparently completely recovered, so much so that he was not recommended for removal to an associated prison, as is usual with confirmed epileptics; and, indeed, not having myself seen him in any attack, I was inclined to doubt the correctness of the diagnosis, and regard him as a malingerer. My friend, Dr. Mayne, however, who had one day accompanied me to visit a patient in hospital, recognized the lad as having been formerly a patient under his care in the South Dublin Union Workhouse. On his assurance, I gave up the notion of the boy being a malingerer, and I now think his case may fairly be regarded as benefited by the treatment.

I do not mean to say that the peculiar odour observed is a sufficient indication whereby one could venture to predict anything like successful treatment, yet the circumstance is worthy of observation; a peculiarly fetid odour from the skin and discharges, is common in epileptic patients, as a forerunner or accompaniment of a series of attacks. One can foretell a coming series by the odour of the discharge from an issue or a burn; but the smell to which I have alluded, seems to me something quite *sui generis*, and as I have already said, is best compared to that of sublimed arsenic.

When epileptiform attacks are traceable to sexual excess in males, I have reason to state with some confidence, that the bromide will be found useful; but as my observations on this subject, are as yet incomplete, I must look forward to a further communication concerning it on a future occasion.—*Dublin Quarterly Journal*.

4. *The External Employment of Aconitine in Neuralgic Pains.* By A. R. GARROD, M. D., F. R. S., Physician to King's College Hospital.

Aconite is a most valuable external remedy; and for the purpose of alleviating neuralgic pains, I know of nothing equal to it. In the form of the *Unguentum Aconitiæ*, in which eight grains of the alkaloid are dissolved in a little spirit, and then thoroughly mixed with an ounce of prepared lard, it is a clean and elegant preparation.—*Medical Times and Gazette*.

5. *A Summary of the Proper Diet in Diabetes.* By EDWARD SMITH, M. D., F. R. S., Assistant Physician to the Hospital for Consumption and Diseases of the Chest, Brompton.

1. *Fluids.*—To be limited by degrees daily until they shall not exceed five pounds and a half in both fluid and solid food. Of this quantity, two to three pints should consist of a new or skimmed milk, and one pint, or less, of tea. In the cold season, and at night, they should always be given when hot. Of all alcohols, brandy is the best, and may be given with water only, or added to milk, or beat up with egg and milk, and given several times daily. No fluid should be given in greater quantity than half a pint at a time, and when milk is reduced in volume by cooking, the daily quantity of fluid must be made up by an additional supply of the same or other fluid.

2. *Solids.*—Dr. Prout's combination of eggs and milk (with sharps substituted for bran) is excellent. Four ounces of sharps and four ounces of peas, beans, or lentils, may be made into bread or pudding, with milk, or into omelettes with eggs and herbs. Eggs and gelatin may be given when starchy food cannot be altogether intermitted. Eggs, gelatin, cheese, gluten bread, meat, fat and oils may be given as largely as they can be digested. The free use of salad oil should be urged, whether in the cooking of fish or flesh, or in the possible use of water-cress as a salad, or drank alone, so that several ounces may, if possible, be consumed daily; but as there are in all persons preferences and dislikes in reference to particular fats, that kind—whether butter, suet, oil, or fat of meat—should be allowed which is the most agreeable. Four ounces of sharps, three ounces of wheaten flour, five ounces of peas, one pound of meat, two ounces of cheese, two pints of milk, and three eggs, will afford more than about thirteen ounces of carbon and one ounce of nitrogen daily.—*Lancet*.

6. Relation of Scientific Research to Medical Science.

At the last meeting of the British Association, several examples were brought forward, demonstrating the direct bearing of scientific researches upon the advance of medical science. No sooner is any new substance (whether an elementary body, such as thallium, or a compound,) discovered, than experiments are made to investigate its physiological and therapeutical action on the living organisms of men and animals. In many cases, these experiments are made by the observers on their own bodies, and the records of science offer several examples of enthusiastic investigators, whose lives have been perilled by the self-administration of dangerous reagents. As a rule, these investigations are made, in the first instance, on the lower animals; but the results so obtained only give a very slight approximation to what would be the nature of the action of these bodies on the human frame.

We know absolutely nothing of the different constitutional powers in the different animals, so that our only means of acquiring a knowledge of the therapeutical action of remedies is by direct experiment in every case. For example, the goat and the sheep are so slightly different in structure and organization, that it is difficult even to discover a well-defined specific distinction between the two animals. Nevertheless, many substances are fatal to the sheep that the goat eats with impunity. A goat will eat at a meal a sufficient quantity of laurel twigs (*Cerasus Lauro Cerasus*) to destroy the life of a cow, a ruminating animal, whose organization closely resembles its own. In the same manner, tobacco—one of the most fatal of all poisons to the human frame—is eaten by goats and monkeys with great avidity, and without any apparent evil consequences. Sir Emerson Tennant, in his work on Ceylon, referring to the invulnerability of the mongoose to the bites of poisonous serpents, says: "Such exceptional provisions are not without precedent in the animal economy; the hornbill feeds with impunity on the deadly fruit of the *strychnos*: the milky juice of some species of *euphorbia*, which is harmless to oxen, is invariably fatal to the zebra; and the tsetse fly, the pest of South Africa, whose bite is mortal to the ox, the dog, and the horse, is harmless to man and the untamed creatures of the forest."

Among the most important new remedies which science has bestowed upon medicine, may be mentioned the preparations of the element bromine. This, as is well known, belongs to the same group of elements as chlorine, iodine, and fluorine; each of these,

though perfectly capable of replacing each other in chemical combinations, has a totally different action on the vital organism.

Chlorine is an essential to the life of all animals, and is supplied in the form of common salt, chloride of sodium. Iodine is, both when simple and in combination, a powerful stimulant, exciting the glandular system.

Flourine, though never yet isolated, is in some of its combinations a powerful poison.

Bromine has been discovered by Dr. Gibb to possess, when administered in the form of ammonium, Br N H_4 , a power of producing insensibility, or even partial paralysis of the nerves going to the glottis and larynx, or organs situated at the top of the windpipe. This knowledge has been at once applied to practical medicine. The painful disease known as whooping-cough, owes its chief danger and discomfort to spasm of the nerves going to the respiratory organs. It has been found that the administration of a few grains of bromide of ammonium, three times a day, has the effect of allaying this spasm, and so preventing the most dreaded symptoms of the disease.

Having alluded to the newly-discovered metal, thallium, it may be as well to mention that M. Lamy states that continued investigation into its properties, has resulted in extreme lassitude and pain in the lower limbs. With a view of determining its real influence on the animal economy, he has administered it to the lower animals, and he mentions that a decigramme of the sulphate given to a dog, has caused death in forty hours. Mr. Crookes, on the other hand, denies its power, and states that he has occasionally swallowed a few grains of its salts without injurious effect.—*Annual of Scientific Discovery*.

7. Meteorological Science.

The most important contributions to Meteorological Science of the year have been made through the balloon ascensions of Mr. James Glaisher, under the auspices of the British Association. The observations of the meteorologist show that the decrease of temperature with elevation does not follow the law previously assumed of 1° in 300 feet, and that in fact it follows no definite law at all. Mr. Glaisher appears also to have ascertained the interesting fact, that rain is only precipitated when cloud exists in a double layer. Raindrops, he has found, diminish in size with elevation, merging into wet mist, and ultimately into dry fog. Mr. Glaisher met with snow for a mile in thickness below rain, which is at variance with our preconceived ideas.—*Annual of Scientific Discovery*.

8. *Cinchona Bark from India.*

The gradual but certain destruction of the *Cinchona* forests of America, which has been viewed with so much anxiety, by all who know how indispensable quinine is to the existence of Europeans, in many of the tropical parts of the world, may, for the future, be considered of minor importance, inasmuch as the successful cultivation of the *Cinchonas* in India, has been demonstrated in the past year. At a meeting of the Linnean Society, London, June, 1863, the first specimens of *Cinchona* bark, sent from India to Europe, were exhibited. It was stated that these had been found to yield a percentage of quinine, and the other febrifuge alkaloids, fully equal to that furnished by the bark of the same species when grown in South America; and it had also been ascertained that quinine might be obtained in small quantities from the leaves. The successful culture of the *Cinchona* plants in India must be regarded as a subject of the highest importance, not merely to the prosperity of India, but indirectly to the whole world; as the exploration and civilization of many tropical countries, by Europeans, is absolutely dependent on a reliable supply of quinine.—*Annual of Scientific Discovery.*

9. *Recent Progress of Chemical Science.*

During the past year, through the aid of the process of spectral analysis, another new body, *Indium*, has been added to the list of the elements. Bessemer's process of manufacturing iron and steel may now be considered as having passed out from the domain of theory, into the province of actual and practical fact. The contributions made to our knowledge, by Professor Graham, respecting the molecular constitution and properties of gases, should also be included among the important novelties of the year in inorganic chemistry. The recent advances in organic chemistry, are thus detailed by a writer in the *London Pharmaceutical Journal*,—Dr. MacAdam. He says: "Not only does the manufacturing chemistry of the day transform starch and sugar into alcohol by fermentation, as in brewing operations; sawdust into oxalic acid by the action of soda and nitre; starch or sawdust into grape-sugar by the aid of sulphuric acid; wood and coal into paraffin oils by the process of destructive distillation; coal into aniline and the coal-tar colour; and guano into a magnificent colour, rivalling that from

the cochineal insect; but the organic chemistry of the day has proceeded to produce artificially, many alcohols and ethers, including jargonelle pear essence and pine-apple essence; and to construct many alkaloids resembling quinine, strychnine and morphine in their composition and chemical properties, encouraging the hope that we may soon be in possession of the means of preparing, by artificial process, these powerful medicines, and possibly others equally efficacious. And more than that, and principally through the researches of Berthelot, dead mineral matter has been worked up by stages into organic compounds. Thus, Berthelot, taking carbon and sulphur, combines these into bisulphide of carbon, a mobile, ethereal liquid; and therefore, by the mutual reaction of copper, hydrosulphuric acid, and the bisulphide of carbon, he obtains olefiant gas. The latter is absorbed by sulphuric acid (oil of vitrol) to the extent of 120 volumes of the gas in one of the acid, and thereafter by dilution with water and distillation, the acid mixture yields alcohol of the same composition and properties as that obtained from ordinary grain. Strecker takes the olefiant gas in solution in sulphuric acid, and by adding water, neutralizing with ammonia, evaporating and heating, obtains crystals of taurine, one of the constituents of bile. Wöhler combines the simple elements, nitrogen and oxygen, by electric discharges, into nitric acid, and then by the successive mutual reaction of this nitric acid with tin, hydrochloric acid, and black lead, and lime (or oxide of lead,) he obtains a complicated organic substance, called the hydrocyanate of ammonia. The latter may also be prepared by passing a mixture of the gases ammonia and carbonic oxide through a red-hot tube. The hydrocyanate of ammonia may then be employed in yielding cyanogen, hydrocyanic acid (prussic acid), oxalic acid, and urea; also formic acid, paracyanogen, cyanuric acid, sulphocyanogen, and mellon.

“When cast-iron (which contains carbon) is dissolved in dilute sulphuric or hydrochloric acid, there is evolved a volatile oil resembling turpentine, and there is left in the vessel a small quantity of graphite, and a brown mould resembling vegetable mould. Ordinary carbonate of soda (washing soda) can have carbon extracted from it, and if the latter is acted upon by dilute nitric acid, and the solution evaporated, an artificial tannin is obtained, which has the property of precipitating gelatine or glue from its solution, like ordinary tannin obtained from gall nuts or oak bark. Berthelot has taken carbonic oxide and caustic potash, and compelled them to produce formic acid (yielded naturally by red ants); and with a single link of the chain wanting, he has manufactured glycerine, which is the base of fatty substances, and combining it with the

fatty acids, he has prepared artificially the oils and fats generally obtained from the plant and the animal, and many more new oils and fats not known in nature. Berthelot has acted upon glycerine by putrefying animal matter, and obtained artificially grape sugar; and has converted oil of turpentine into ordinary camphor and Borneo camphor; whilst, in conjunction with De Luca, he has prepared artificially one of the chief constituents of oil of mustard (sulphocyanide of allyl).—*Annual of Scientific Discovery*.

ECLECTIC DEPARTMENT.

1. *A Course of Lectures on the Progress of Surgery during the present Century*. Delivered at the Royal College of Surgeons of England, in June, 1865. By Sir WM. FERGUSSON, F. R. C. S., F. R. S. Surgeon to King's College Hospital, Professor of Surgery in the Royal College of Surgeons and Surgeon Extraordinary to H. M. the Queen.

LECTURE IV.—OPERATIONS ON THE JAWS.

Amongst the novelties and improvements in surgery, in the present century, few rank in magnitude and importance above those associated with the pathology and treatment of tumours of the jaws. Judging from what might be seen some thirty or forty years ago, of large tumours in connection with these bones, and what was said on such subjects by earlier authors, we need not hesitate in coming to the conclusion that little was done in such cases, and that nature was permitted to take her course. Here are casts (Figs. 1 and 2) on which, I have often looked with interest, and with a sigh that surgery had done nothing to relieve the unfortunate bearers of such tumours. I know not the history, throughout, but in all probability years of misery and lingering death were the concomitant and result. Even although the features of the face elsewhere are emaciated, and although death may have been caused by the disease, I doubt if there was malignancy here in the true pathological meaning of that word; and I believe, had such cases been seen in recent days, that modern surgery would have stepped in and arrested the progress of these formidable looking tumours.

Of all innovations, the operations for removal of tumours of the jaws, have created the greatest impression on my mind. There is little active excitement associated with the operation of lithotrity;

and ovariectomy, although involving the life of the patient, and demanding both energy and courage on the part of the surgeon, cannot, as regards performance, be considered a high-class operation. But for the perfect removal of these tumours, I am inclined to think that the highest requirements of operative surgery are called forth. There is such variety of manipulation, such necessity for caution, yet such boldness in action, that in my opinion, neither removal of ovarian tumours, nor of the most formidable growths in the scrotum, can at all compare in scientific accuracy, with those upon tumours of the jaws.

Whatever may be thought on these matters, there can be no doubt of the value and importance of the operations; and as it has fallen to my lot to have had considerable personal experience in such cases, I feel that I can scarcely do better than devote one of these lectures to the subject.

The anatomy and physiology of the jaw bones, as also their pathology, from shape and function, may be considered as in many respects different from other bones of the body. The association of the teeth with them is a physiological phenomenon, and forms an element for mischief, or, to use a more appropriate term, disease, such as is absent in all other bones. Yet I am doubtful if the teeth really induce much mischief in these bones. The varied ails to which the teeth are liable, may, and generally do, leave the jaws unscathed; yet, when tumours are present, a question is often raised as to the injurious influence of certain teeth. The abstraction of a tooth in such a case, is merely fencing with the outside of the disease. In irritation of a socket, this doubtless may do good, although at a sacrifice which time might possibly save, but I cannot say that I have ever seen the removal of a tooth produce any substantial benefit in the cases under consideration. The tumour itself must be removed if good is to come from surgical interference. I trust that I am not less acquainted than my neighbours with common sense surgery, but I never saw a tumour of the jaws dispelled by constitutional treatment. In doubtful cases, and where there has been much derangement of health, I have seen favorable changes, in time and through judicious management. I have even seen a case, where, to all appearance, a tumour was malignant, deep-seated, and beyond all hope of a cure, either by nature or surgical interference—such an opinion was given by one of the best surgeons of the day, and such, I confess, was my own—yet in the end it proved to be only a chronic deep-seated abscess, which burst, and got well spontaneously. Such mistakes do little credit to surgical diagnosis, and let us hope that they are of rare occurrence.

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But I wish now to refer to such cases as are beyond the power of hygiene, and where a process of removal is decided on. Caustics are of little value, ligatures out of the question; in short, whatever enthusiasts may think of their skill in treatment, constitutionally or locally, I wish to speak solely of those requiring cutting for their removal—I wish to speak of excision of portions or of the whole of the jaws.

I have selected this theme on the present occasion, partly because it is illustrative of the progress of surgery in the present century, and partly because I imagine that my favorite conservative practice may be as usefully developed here as in any other region of the body, or in other cases of surgery.

The first and early operations for removal of tumours in or of the jaws, initiated by Dupuytren, Gensoul, Hodgson, Wardrop, Lizars, Syme, and others, produced great sensation in the surgical world. In cleverness of conception, there seems scarcely a doubt regarding them in the present day; and in vigour of execution they have not been surpassed. Yet, even here, it may be doubted if perfection has been achieved; and I venture to make—indeed, I may say, reiterate—my humble contribution towards it, for most that I am now about to say has been stated over and over again in my clinical teaching.

I have no doubt that in diseases of the jaws operations have been performed when they were not warranted; and I am equally of opinion that they have been neglected when they might have proved of the utmost value. Here, as in other departments of surgery, perfection will probably never be achieved. Mistakes and improprieties will occur, even in the best regulated minds and hospitals. I make no pretensions to be above them myself; but, by way of originality, I shall plead for a share of conservatism, even here, where it has been comparatively little thought of.

Happily, cancerous tumours of the lower jaw, are somewhat rare; but cancerous ulceration, beginning in the gums, or more probably extending to them from the cheek or lips, is by no means uncommon. When the surgeon can encompass the disease in the cheek or gums with the knife, he may clip away the alveolar ridges with good prospect of a satisfactory result, provided the disease be of the kind called in modern days “epithelial.” If there be no glandular affection in the neck, the operation is likely to succeed, just as with cancer of the lower lip; but where that kind of cancer has eaten away the lower lip, and laid hold extensively of the bone itself, I deem excision a misapplication of surgery. There is not the smallest chance of a permanently successful issue. I have known this done, and even a flap of skin brought from the neck to fill up the gap; but I doubt the wisdom of the proceeding.

I look upon the lower jaw as giving the most forcible examples of the value of a doctrine which I have long advocated—albeit, contrary to the opinions of many, possibly even against the ordinary doctrines of surgery. In one of my lectures last year I referred to this. Tumours of the lower jaw are often removed by vertical section, and both ends, so to speak, of the bone are left. Every one knows how successful these operations usually are. When a section is made in the healthy part, it may truly be said that disease seldom, if ever, returns. Yet this feature is totally lost sight of in the bones in other parts; and so if a tibia or fibula be affected with tumour, nothing but total ablation will satisfy. Amputation in the thigh is the step. If the femur is affected, the hip-joint only will suffice for the sweep of the amputation knife; and a like pathology prevails in regard to other long bones. But in the lower jaw the surgeon will cut out an inch or two, or two-thirds, of the bone by transverse section, and the pathologist, very improperly in my opinion, says not a word against the proceeding. I had great pleasure last year in referring to Mr. Syme's views on this subject, whilst alluding to his novel and bold operations on the scapula and head of the humerus, which he performed with a view to preserve the greater part of the upper extremity; and my own impression is so strong in regard to this, that I actually advocate horizontal sections of the lower jaw when it appears practicable. If only as much, in a state of health, can be retained as shall, in some measure, preserve the shape of the lower part of the face, so as to prevent the collapse which takes place when the whole mental portion is taken away, I fancy that the surgeon enacts a good example of conservatism.

Again, in operations here, it has been much the custom to make the incisions run into the mouth, thereby involving division of the lower lip. Now, although I do not mean to deny the occasional necessity for this extensive wound, I am strongly of opinion, from my experience, that there is no urgent necessity for division of the prolabium. The mobility of the lips is such that if the mucous membrane of the cheek, which runs to the gums, be divided, the labial orifice may be moved extensively—so extensively that any reasonable manipulation may be effected on the jaw itself. I know that this limitation has been occasionally resorted to, but it has not been specially referred to as an advantage. I am, however, convinced of this, that even in the removal of the largest tumours—such as this (Fig. 3,) or this (Fig. 4)—there is no necessity for the extensive incision referred to. It may be asked: What does that extensiveness imply? It may be only a quarter of or half an inch! and the question is just such as I desire to answer. Besides saving the lip entire, the principal blood-vessels—the labial artery.

and vein—are untouched; and so there is neither trouble as regards re-adjustment, nor hæmorrhage, as when the lip is cut. If it be needful to cut vertically through the whole thickness of the bone, I fancy that the operation can be done by a lunated incision, just below the lower margin of the bone, with ends reaching upwards, as represented in these sketches (Figs. 5 and 6,) almost as readily as if the mouth were opened at the lips,—the semilunar flap being so easily turned upwards, whilst the division of the mucous membrane will sufficiently relieve the cheek, as to let saws and cutting forceps be applied to the bone. If a tumour involves much of the base, division of the facial or external maxillary artery is a necessity. It is from this vessel alone that severe hæmorrhage is to be expected, but by tying it at once, or by judicious temporary pressure, there need be no fear on this point. When a ligature is used, I strongly advise that both ends of the vessel be tied, for in one instance I had great trouble from secondary bleeding from the upper end of the vessel eight or ten days after the operation.

But I am more anxious to refer to operations on the upper jaw than on the lower; for I fancy that I can say fully more that is original in regard to these, than those on the lower. I am as strongly conservative here as in other parts of the body; and in this locality I use the term in a double sense, both because I think that parts may be retained which have generally been removed, and because I think that even the features may be more effectually preserved by certain steps than by others.

The modern idea with regard to the removal of tumours in the upper jaw has been associated with excision of the whole of that bone; and the operations of Gensoul, Lizars, Syme, and others, who were the earliest advocates of this proceeding, seemed to imply the absolute necessity of removing the whole of it. The essence of the operation, so to call it, consisted in isolating and cutting through parts of the extreme points or circumference of the bone—even the sacrifice of the malar bone by dividing the zygoma. The round bulging part of the bone behind, at the pterygo-maxillary fissure, the orbital plate, its margin or whole extent, the nasal surface, and the palatine plate, were all marked out for removal in excision of the upper jaw. Now, whilst not inclined to call in question the propriety of what was done and advocated by these early operators, I fancy that a better style of surgery has made such sweeping proceedings scarcely needful. It does not appear that much was done in former times for the removal of such growths. A few rare cases have been recorded on which operations were performed; but such proceedings were far between, and had no position in the roll of our operations. So, when modern surgeons began the excisions now

so extensively recognized, tumours of a large size were more frequently met with than in the present time; and hence, perhaps, the necessity of reaching those outside points that I have just referred to. But in recent days the surgeon interferes at an earlier date, and before a tumour has implicated the bone extensively. It is in such instances that I believe there is room for improvement both in diagnosis and practice, and it is here that I make so bold as to propose that which I conceive to be different from ordinary accredited proceedings.

In operations on this bone, as on the lower jaw, and as with bones in other parts of the body, I take the liberty to protest against the doctrine that the whole bone must be taken away when there is tumour present. Indeed, it is largely in consequence of what I have seen in the maxillæ that I have come to the practical conclusion that total excision is not always needful in the case of tumours.

Again I express my conviction, that in removing diseases of the upper jaw by the extensive operations referred to, the modern surgeon has been amply justified; but I feel equally confident that in many cases there is, or has been, no need for such destructive work. The malar bone for example (separated, be it observed, by an articulation from the maxilla, and therefore not within the scope of certain so-called physiological or anatomical laws) has often been removed, although there has been no trace of disease upon it; but all for the sake of making sure of the total extirpation of the jaw-bone. Now I make bold to say that all this destructive surgery may in many instances be avoided, and that partial excision will prove, on the whole, as effective here, as I am convinced it does in other parts. In certain instances the malar bone may be saved; in others, the surface next the pterygo-maxillary fissure need not be interfered with; in many the floor of the orbit need not be touched, nor the nasal surface, nor the palatine plate. Much regarding these views will depend on the individual character of the disease; but of this I am convinced, that in the majority of such cases one or other of these parts may be saved. It is scarcely possible to overrate the advantage of saving one or more of them, nor do I doubt that a general feeling must be on my side in this opinion. But the question may be asked, how can such parts be saved? My answer is, to let them alone when they do not seem to be involved. But, again, it may be asked, how can you let them alone if division is to be effected at such extreme points as the zygoma, at the outer side of the orbit, the apex of the nasal process, the junction with the other maxilla in the mesial line at the alveoli below the septum, along the roof of the mouth, and also at the palatine junction with the palate bone? Hard questions seemingly! yet in my opinion,

as easily answered as anything associated with conservative surgery. Just take away that which is in disease, and leave that untouched which is in health.

But, supposing the doctrine which I advocate admitted, how can this be done effectually? And here I come to one of the chief objects of this lecture. My view is, that instead of attacking disease of the upper jaw at its circumference, as has been the almost invariable practice since Gensoul's proposal to excise the whole bone, it is better to get into the disease as it were, and cut from the centre to the circumference, making sure that in doing so, that circumference shall be thoroughly encompassed. But, where, it may be asked, are the instruments to do this? It was an old practice with the chisel and mallet; but it did not answer! These are the instruments (Figs. 7, 8, 9 and 10,) small saw, bent forceps, and gouge. The saw, (Fig. 7) commonly called Hey's, these bent forceps (Figs. 8 and 9) and the gouge, (Fig. 10,) are almost essential to the process I am now referring to. The saw may be dispensed with, but the forceps and gouge are well-nigh absolutely requisite. My opinion is, that in such operations, if the great mass can be removed by adequate cuttings at convenient parts, any remaining portions may be readily clipped away by such forceps as these, or scooped out with the gouge; the rule being to clip or gouge until healthy surfaces are reached; and if this cannot be done, for fear of going too deep, then the surgeon may conclude that the disease has gone further than he calculated, and that it is beyond the reach of operation. By such a course as I have now indicated, I have frequently cleared the upper jaw of its diseased deposits, and left both orbital and palatine plates entire, and, as a matter of course, the posterior surface. The nasal side of the bone I have never taken much into account in these cases, for I think it of little consequence compared with the intention and magnitude of the operation.

Associated with these views and with the style of surgery implied, I must endeavor to improve some further points which I humbly consider almost as important as those to which I have just referred.

There are no incisions that I know of in operative surgery—not even excepting that for ovariectomy, which in reality is a bug-bear—so frightful to behold as those for removal of the upper jaw. This (Fig. 11) represents Gensoul's; this (Fig. 12) Lizar's. There have been few modifications of these, and that from the angle of the mouth towards the zygoma has been the favorite, when the tumour has not been very large. If it has been large, then such incisions as these (Fig. 13) have been most in esteem; that from

the angle of the mouth to the zygoma, and another from the margin of the lip immediately under the ala in a direct line upwards to the inner canthus, and thus a sort of triangular flap of the cheek has been raised off the tumour. I have frequently practised all these plans, with the exception of Gensoul's, which I have always avoided in consequence of its destructive character as regards features; but for many years I have found that less extensive incisions will suffice, particularly if placed as I imagine they should be. The wound from the angle of the mouth to the zygoma is, I think, the most objectionable of all, the cicatrix being conspicuous ever after.

After almy experience and repeated trials, I have latterly formed a strong opinion that the features of the face may be better preserved than as yet by the generality of surgeons; and my anxiety to impress these views is certainly not the least object of this lecture. First, I consider that many tumours of the upper jaw may be summarily removed without cutting the lips or cheek at all; and next, should more space be needful, it may be gained at less cost of feature than has generally been supposed. In dealing with the upper lip for removal of tumours of the upper jaw, I greatly object to any other incision than one in the mesial line, which must be run into one, or both nostrils if required, as represented in Fig. 14, in which instance the tumour involved as much of the roof of the mouth as is shown in Fig. 15. There are two advantages of great importance, in my opinion, associated with this incision. First, the wound, being made in the furrow below the columna, and exactly in the middle of the lip, is less observable than on any part; and next there is an inch in length gained by the natural opening of the nostril. The ala of the nose is so easily raised, and with the tip can be so easily moved according to the will and wish of the operator, and the cheek can be so readily dissected off the tumour as high as the margin of the orbit and as far out as the malar bone, that a large space for operation on the anterior surface of the maxilla is easily made. Since 1848 I have never made any other incision in the upper lip; and I have no hesitation in stating, from experience of twenty cases or more, that in a number of operations of moderate sized tumours, there is no need for more extensive incisions on the outer surface of the face. I have removed even such a large tumour as is here displayed (Fig. 16), through a single incision in the upper lip like that advocated.

Should it so happen that, the tumours being large, more room is required, I am further led from my experience to prefer an incision alongside the nose, and a horizontal line as here (Fig. 17) indicated to those of Gensoul or Lizars on the cheek. By these incisions through the lip, up the side of the nose, and along the lower eye-

lid, as far out as may be needful, say even to the zygoma, all the room required for the removal of a large tumour may be secured, and the most conspicuous part of the cheek may be left untouched. Another great advantage which I claimed for these incisions is, that the chief vessels of the surface are all divided at their narrowest points, and thus hæmorrhage is less severe, than when the facial artery is divided in the middle of the cheek, as in the common incision.

I am unable from want of time to dwell longer on this subject; but before concluding, I must state my impression, that the views regarding operations on the upper jaw, to which I have now drawn attention, and which, whether for good or for evil, I must claim as my own, cannot be carried out excepting by the use of such instruments as are here shown (Figs. 7, 8, 9 and 10.) The Hey's saw and the gouge were familiar to surgeons before my time. The straight cutting forceps, depicted by Scultetus in former years, and brought into fashion in modern surgery by Liston, are of limited use in such instances; and where prejudice or ignorance does not prevail, they may be said to be entirely set aside by these angular ones (Fig. 8,) which effect all, and even more than the straight ones. But in particular these semi-circular clippers (Fig. 9) will be invaluable; and, with curves of different circles, the largest tumours may be circumscribed by them. If even some of the tumour should not come away with the mass, the blades will enable the surgeon to remove the whole, and clip upon the healthy surface.

Whilst recommending these angular and semi-circular forceps, which I claim to have originated for surgical purposes, I cannot omit referring to these additional blades (Fig 18) as being of the greatest imaginable value in the removal of some tumours in the upper jaw. A quarter of a century ago, in imitation of an older custom, small hook-beaked blades were used for seizing arteries, on stumps and other open surfaces, when ligatures were required. They were likewise of use in seizing and holding small tumours during removal. It was Mr. Liston who, I believe, gave them the name of the bull-dog forceps. In my early experience in operations on tumours of the upper jaw, I had observed the difficulty of separating them, even after a free use of saw and forceps; and this instrument was a device of my own to facilitate that step. The commanding size and strength of these blades gives facilities for wrenching out a tumour of the upper maxilla, previously unknown. Their grasp is such that, in comparison with the others, I called them the lion forceps; and they are now well known under that name, although not so well by my own, for it is not long ago that a London hospital surgeon, who, being provided with one of them for

an operation he was about to perform, asked me if I had ever seen the instrument, and kindly directed my attention to it as one of peculiar merit! In operations on the lower jaw it will be found of wonderful service in keeping all steady during the application of the saw or in disarticulating; and in various operations elsewhere, when a stronger catch than the fingers can give is required, their use in my hands has added largely to the value of my digital resources.

In the preparation of this lecture, I had sketched the chief features of diseases associated with the jaws, and particularly those associated with the antrum; but I found it impossible to keep all within the appropriate limits, and, being anxious during such an opportunity as this to state my views and practice when operations are required in such cases, I have thought it best to omit that which, in my estimation, had less of the aspect of novelty than the portion which I have now submitted to your notice. You may have observed that here, as in certain other departments of pathology and operative surgery, my mind takes a strong local bias, and I advocate what some may think or call, restricted measures, in preference to those of a more sweeping kind, which involve the destruction and loss of a considerable amount of sound substance around. I trust that I shall not be misunderstood here. I advocate the removal of all disease when an operation is really undertaken for tumours. If there is no malignancy, there is, according to rule, no need for taking away more than the disease. If a sound surface is left, that is all that the surgeon need care about. If the disease be malignant, I have great doubt if cutting widely beyond it makes much, if any, difference as to its return; and this pathology I apply particularly to malignant tumours in bone, for very generally when there is a return, it shows in the soft parts more than in bone. Of course, I willingly admit that every now and then, the renewed mischief really does come in the bone; but that feature should, in my opinion, contribute to form the exception rather than the rule for such operations as we have had under consideration to-day. In addition, and in some degree to give reasons why I advocate conservatism in their performance, I may state that I entertain views as to the original and early seat of many of these tumours about the antrum, which are, in some respects, peculiar. Most surgeons, I believe, have an impression that when a person is said to have a tumour in the upper jaw, or, to be even more precise, in the antrum, the whole of this cavity, with its walls, is so involved, that in any operation for removal, there is an absolute necessity that this circumference—the walls of that cavity—must be taken away. Now, it is my opinion that disease

in the antrum, beginning in the cavity, as it were, is much more rare than most people think. My impression is, that in many, if not most, instances the wall of the antrum is the part first affected, and that its cavity is gradually filled by the growth, and then perhaps expanded. Actually, in some instances, so strictly local is the disease, that the antrum may be in a manner displaced and compressed, whilst its mucous lining remains without indication of disease. This I have particularly noticed in tumours which have had their origin in the alveoli; and I have seen frequently growths of considerable size here which have projected forwards, downwards into the mouth, and even upwards, and yet have left the antrum scarcely, if at all, involved. Any part of the circumference of the antrum may be the original seat of a tumour, and if such tumour be attacked by an operation at an early date, I maintain that it may be removed, and the rest of the antrum or jaw be left. If it so happens that the tumour is chiefly associated with the posterior wall or part of the antrum, the diagnosis will be more difficult, and if an operation is performed the destruction of comparatively sound parts in front must be extensive in proportion; but if the tumour happens to be at any other surface, it is my opinion of great importance to reserve as much as possible by removing only the offending part. It is unfortunately too often needful, owing to the extensive development of the disease, to remove all between the tongue and the eye-ball; but cases are frequently met with of a more limited extent, and if the surgeon follows the practice which I have ventured to characterize as a modern improvement—viz: to interfere at a reasonably early time, so as to arrest the tumour in its onward progress, he may remove the disease, and yet save the greater part of the upper maxilla. In one case the sacrifice of only the inner or nasal wall of the antrum will suffice; in another the front may alone require removal; again, probably the floor of the orbit or roof of the antrum may be involved, or possibly only the lower part of the antrum—that is the roof of the mouth, with, perhaps, the alveoli. To save the floor of the orbit, as happily may often be done, is in my opinion of great importance; but of all these local operations that I am now advocating, that of removing disease, and at the same time preserving the roof of the mouth, is the one of most importance in my estimation, and where the extent of disease will permit, the surgeon should make every effort to do so. I have known a sound alveolar ridge, a perfect set of teeth, and one side of the roof of the mouth all sacrificed to get at a comparatively small tumour in the antrum, which could readily have been removed with the sacrifice of only the front wall of the cavity.

But time tells that I must cease, and I shall do so after a few words more.

The dread of hæmorrhage was great in the early days of these operations, particularly when the upper jaw was affected, and it was the custom for a time to begin by tying the common carotid; but that practice was soon given up. Vigour and rapidity of action are the best safeguards against this danger.

Every now and then one hears objections to chloroform in such operations. For my part I have none. I have used it invariably since the introduction of anæsthesia, and I have never had reason to trace evil to it. It has seemed to me a greater boon to a patient in such an operation than in almost any other, for there are few more severe or frightful in the whole range of surgery.

In offering these observations, I speak from a personal experience of between thirty and forty cases. Twenty of them have been performed in King's College Hospital. I did not scruple in my lecture on Lithotomy to tell the fatality of that proceeding in my own hands: nor need I hesitate here to remark upon the seeming comparative immunity to life of operations on the jaws. There have been returns of disease and ultimate deaths, as with cancers and fibro-recurrent tumours elsewhere; but of the whole list of my cases I have lost only five—a success which, as compared with lithotomy, seems remarkable, particularly when we take into consideration the huge wound in the face as contrasted with the limited incisions in the pelvis.

At one time, Sir, before the cares of life were deeply felt, I occasionally said that my thoughts during waking hours, were never five minutes consecutively off my profession. With an indifferent memory for many things, I fancy, if I can judge myself aright, that I have a tenacious one in surgery. It is well-nigh forty years since I, as a lad, first witnessed one of these operations on the upper jaw, performed in the Royal Infirmary of Edinburgh by my late esteemed friend, Sir George Ballingall, yet my recollection of the scene is as vivid as if it had been yesterday; and I have an equally lively recollection of the exciting descriptions of certain operations on the lower jaw, published by Mr. Cusack, of Dublin, about the same date.

I end this lecture as I began it, by stating that I know of no operations so exciting and so likely to rivet attention as those which we have just had under consideration.

2. *On the Progress of the Hypodermic Treatment of Disease.*

By CHARLES HUNTER, M. D., Surgeon to the Royal Pimlico Dispensary and Lying-in Charity.

My experiments in 1858, were the first to upset the previously maintained theory, that to produce a full medicinal effect upon any given nerve or locality, the medicinal injection should be into that locality.

As evidence opposed to that view, two cases of neuralgia were given by me, in which, as much medicinal benefit followed the adoption of my method as had previously followed the use of the method of Wood; and without being accompanied by the disadvantages which must, under certain circumstances, attend the use of Dr. Wood's plan. So long ago as November, 1843, the injection of morphia had been used by Dr. Alexander Wood, of Edinburgh, and since that date it seems to have been extensively practiced by him and his disciples, upon the principle laid down by him in that year. His instrument was made by Fergusson, of Giltspur Street. The disease for which he used it was neuralgia; the agent was morphia; and his theory was that of localization to the neuralgic site.

"I would impress upon you," said Dr. Wood, in 1858, "that the instrument is not to be put into the place where the patient complains of the pain, but into the spot where you find you can awaken the pain upon pressure."

Employed upon this theory, it seems that in 1858, the use of the instrument had become "nearly universal," for the treatment of neuralgia, in Edinburgh. The evils, chiefly dreaded, were gastric disturbances with vomiting, and excessive narcotism. Nephenthe seems to have produced less sickness in the hands of Dr. Wood than opium or morphia, but no one of these agents was found to be infallible.

For fifteen years—namely, from 1843 to 1858—the *local* injection of Wood seems to have been more and more employed in Scotland, but it was little, if at all, known or used in this metropolis. It is right to state here that Mr. Rynd, of Dublin, claims priority in this matter. "The subcutaneous injection," says he, "of medicinal substances, to combat neuralgia, was first used by myself in Meath Hospital, in May, 1844." The *Bulletin Therapeutique*, for 1861, says that Mr. Rynd employed a solution of ten grains of morphia in a drachm of *creasote* for his neuralgic and sciatic cases, a compound I should be very sorry to inject beneath the skin of any individual.

His instrument was, I believe, a clumsy one for this purpose, as a lancet had to be used before inserting the point of the syringe. The syringe for injecting nævi and hæmorrhoids, which Dr. Wood employed, was, I suspect, inferior in construction to the one I now use, for he states that he thought it best to dissolve his morphia in sherry wine, rather than in water, lest the latter should rust the instrument.

The syringe which I am in the habit of using for injections will not rust; it is a modification of one introduced by Messrs. Savigne in 1857 (and described in the *Illustrated Exhibitor* of 1858.) The tip of the pipe is finely pointed, and made of hardened gold, in which two particulars, it differs from the French one invented a year or two before. In October, 1859, I had the barrel of the original syringe enlarged to hold thirty minims, the screw more carefully regulated, and the glass barrel graduated.

In 1858 the plan of Wood was first used in St. George's Hospital, Dr. Pitman having kindly consented to let me try it upon a man (T. G.) who had suffered frightfully from neuralgia for four years. At the same time, I employed it in the case of severe hemicranal neuralgia with disorganization of the eye in a young woman (E. P.) about eighteen years old. Both cases received decided benefit; neither was speedily cured; both had abscess in the neuralgic site, from the continuance of the localization.

I then varied the site of the injection, chiefly puncturing the arm, in both patients. The man went out cured, the young woman went to the Middlesex Hospital. She was the first patient treated by subcutaneous injection in that institution. Under the care of Mr. De Morgan, the varied site of injection was had recourse to, and the same solution that I had used at St. George's was employed. She received great benefit, and has now been for several years free from neuralgia.

It appeared fair to deduce from these cases—

Firstly, that in neuralgia equal benefit followed distant injection of the cellular tissue, as followed by the injection of the neuralgic site.

Secondly, that localization was not necessary to benefit a given part.

Thirdly, that for certain reasons it was better not to localize.

The chief being: 1. The infliction of unnecessary pain; and, 2. The almost certain risk of irritating, thickening, or inducing matter in the part from the repetition. It, moreover, became evident that a large class of neuralgia would be excluded from this treatment if it was necessary to inject the neuralgic site.

But as my experiments showed such was not the case, I inferred

that diseases of any one part of the body could be effectually treated by injection of cellular tissue of any other part. Before introducing this as a *law*, it would be better to furnish one or two *more striking* examples than the two first mentioned, and as regards cure, rather prolonged cases. I will take, for example, such forms of neuralgia as would have been treated in Edinburgh by the local injection.

CASE 1.—On the 3d of June, 1863, Mrs. B., aged sixty-three, consulted me about an attack of sciatica from which she suffered. She had walked lame on account of the pain for two years. Rheumatism and great mental anxiety had preceded it. She had taken two or three grains of morphia daily by the advice of a London physician, up to the time I first saw her. The atropine injection, one-thirtieth of a grain, in the arm, produced its characteristic phenomena upon the system; and forthwith removed the pain. She had no pain from that time for about a year, when she came up from the country, and again received similar benefit.

CASE 2.—In January, 1859, Mrs. R. had severe facial neuralgia, which had lasted some months, and defied ordinary internal as well as local treatment. I injected the arm of the same side of the body with the acetate of morphia. It caused some gastric irritation, and yet cured the neuralgia. She has had no return of it since that single puncture six years ago.

CASE 3.—G. C., aged nineteen, tic douloureux, left facial region. Duration, three months, quinine and other treatment previously tried without effect for several weeks. Atropine puncture was used on November 16th, 1863, and at intervals of two or three days, as the pain happened to recur; each puncture removed the pain before he reached home. He was cured in a fortnight. No return when seen five months after. The injections were made in the form of the opposite side of the body.

I will now pass on to the second part of the subject—viz: the injection of medicines *into the cellular tissue*, in order to ascertain their *general effects* upon the system. This first took place in November, 1858.

CASE.—E. H., under Dr. Page, at St. George's Hospital, suffering from delirium tremens was the first case thus treated. He had been very violent, and without sleep for two nights and three days. Half grain doses of morphia, by the mouth, had been repeatedly given with no effect. I injected, at the request of Dr. Page, one-half grain into the neck; the patient was soon quiet, and slept altogether about twelve hours. He rapidly got well with the aid of two subsequent injections.

From the good effects of the morphia, in this case and a few

others, I deduced "that, by the introduction of narcotics into the cellular membrane of the body, we have a mode of attacking and subduing cerebral excitability, more rapid, more certain, and more pure in its action than by the stomachic doses."

Such was my proposition in 1858, relative to cerebral diseases. It was silently received, but practically taken up by many leading men, especially in the hospitals of large towns.

My subsequent experience not only corroborates that conclusion, but now leads me to add the following: That in cerebral affections, medicines called anodynes frequently act so far more effectually, and so differently from the stomachic doses of the same, as almost to warrant us in considering them as different medicines.

Let morphia be taken as a type, it is the agent used more than any other, and has, therefore, been no doubt used both ways by many now present. Taken by the stomach in any ordinary case, let us see how it often acts.

It makes the patient feel sick and qualmish, it nauseates, it even produces vomiting; it causes sleep, but the sleep is disturbed and excited; the patient dreams more than usual; he awakes in the morning with a dry mouth, with a coated tongue; he feels sick on waking, and does not enjoy his breakfast; neither do the liver or the bowels act as usual; he feels a tightness, or a weight, or a giddiness in the head, throughout the day. In fact, the agent given by the mouth, to reach and to quiet the brain, has acted as an irritant to the pneumogastric and sympathetic nervous system, in contact with which it was first brought.

Let us now see how the patient fares with the same dose given by the cellular tissue. The morphia goes by a shorter road, and reaches the goal at once. The pulse instantly rises, the system glows, the face may slightly flush as the skin gets warm, and rapidly perspires. The pulse then goes down ten to twenty pulsations below the normal. The brain is soothed—sleep is gentle and happy. The patient awakes restored. There is no dryness of the mouth, no nausea, no sickness nor constipation of the bowels, for the morphia has gone to the brain by the shorter and more direct road. The skin is more acted on by this mode, not as a result following the nausea of the stomachic dose, but almost as a direct effect synchronous with the first quiescence of the brain.

I will now proceed to indicate a few of the special advantages that attend the injection of medicines into the cellular tissue, when used for the treatment of diseases distant from the site of injection.

1. For derangements of the cerebral nervous system, we have, in the hypodermic method, a means of treatment far superseding in its immediate efficacy any other mode of medication.

In *cerebral* cases, which I have placed at the *head* of the list, we have hardly to consider pain at all. We have to deal with a sensitive and perceptive organ, not with a nerve, an organ which, for the due performance of its functions, ought really to be at rest one-third of our lives, a third of each day. Pain in these cases is only an occasional symptom—it is one among others of cerebral nervous exhaustion.

The more frequent symptoms of cerebral over-taxation are insomnia, irritability, excitement, melancholy, delirium, mania, less of reason, &c.

These I submit to be all phases or degrees of cerebral excitement and exhaustion—the one merging into the other; the mildest often becoming the most severe, simply because it was not checked in time. *Insomnia* is a cerebral condition that may come on during any bodily illness, whether accompanied by pain or not. The anxiety attending the illness may often be the only cause of the wakefulness, in a nervous and irritable person. It may occur without any bodily disease, as in the hysterical, &c.

Prolonged wakefulness for many nights or weeks together may lead to excitement and delirium in one temperament, to melancholia in another, later perhaps in life. Opium and morphia will usually cure these derangements—it will *give* sleep and prevent simply insomnia going from bad to worse. In many cases, the opium does its duty well, when given by the mouth; in others, it distresses the patient in various ways. Where the natural tendency is to relaxation of the bowels, it seems to suit better than at any other time. When constipation is natural, it makes matters in that respect worse.

Given by the cellular tissue, neither morphia nor opium ever constipates. I have used the morphia injection for weeks together, in cases of chronic disease, the bowels acting daily—but never acting without medicine in the same patients, if the morphia was given by the mouth.

Neither is the stomach deranged, nor the appetite interfered with, as with the stomachic dose. In many cases I have found the appetite *improved* by the injected dose.

2. In *melancholia*, the effects of morphia, thus administered, are decidedly beneficial. Opium in some form seems to replace the missing elements in the desponding and sleepless brain, and it does so without producing anorexia, &c. The morphia-puncture will, in a few minutes, restore the lost equilibrium—it will make the patient feel cheerful and happy; he will then eat and take exercise, or go through those professional duties he had entirely despaired of performing, perhaps only an hour before.

3. But it is in *delirium tremens* and in *mania*, more than in any other disease of this class, that the immediate benefit is most manifest. Although differing in their causes, I class these diseases together, for whether *mania* arises from violent excitements, from drink, or from exhaustion, as in the puerperal woman, still it resembles *delirium* from drink in this important symptom—the *insomnia*.

Most cases of this description have had large, oft-repeated doses before they are admitted into hospitals; but they have failed to give sleep—the insomnia is almost the essence of the disease—a good sleep obtained, the case is half cured.

It is in this class of cases that a single dose, administered beneath the skin, will at once break the neck of the disease. It will often at once stop the delirium, correct the mental aberration, and remove the exhaustion, as produced by the injection. It is the food of the brain, the sustainer of nerve-force.

Much is gained by this plan in *delirium tremens*. The patient will not swallow—the subcutaneous injection obviates that difficulty. The stomach will not absorb or digest the opium—the morphia put beneath the skin is absorbed in five minutes. Time is lost by the stomachic dose; it is gained by the hypodermic; uncertainty attends the one plan, certainty the other. Dr. Robert Fergusson told me he counted twenty-four one-grain opium pills in the stomach of a patient who had died in some hospital—unabsorbed, those pills can have done no good, but rather harm, embarrassing the prescriber.

Another advantage is, that *restraint is avoided*. During the hours and days that we might wait for the unabsorbed opium to act, the violence, or rather the incessant continuance of the muscular movements, has often seemed to indicate the necessity for the strait waistcoat. This helps to cause or increase venous congestion. In fatal cases, Dr. Barclay thinks the opium has often borne the blame, when the forcible restraint was really more at fault.

By the hypodermic plan the *necessity for restraint* is done away with; the patient, if not asleep in twenty minutes, is almost always perfectly quiet, neither talking nor moving; and thus we see another advantage that we gain, *the avoidance of exhaustion*.

To resume, briefly, concerning cerebral affections. This treatment has advantages especially its own, restoring the proper function of the brain, composing, and giving it sleep and tone, when the same medicine otherwise given has only caused irritation, and delayed the cure, which by the injection would have been more quick, permanent and effective.

Passing to the spinal affections, we find the same advantages to attend the use of the treatment, whilst the medicine employed and

the nature of the disease may vary much. Here pain in some form or other, *excessive muscular* action, or its *complete deficiency* are the three chief evils to be contended with.

Insomnia in these cases is an induced or secondary evil.

Morphia is far from being the panacea, even when thus injected, in this class of cases, although so invaluable in cerebral affections.

Acute sciatica, for example, may prevent sleep for many nights together; the morphia injection may meet the insomnia, but it does not always cure the sciatica; it palliates the *induced* symptoms, but is not always the agent to strike at the root of this disease.

M. Ozanan, very rightly, I think, holds the view that the various alkaloids in opium have each a part of the nervous system on which they more particularly act—morphia, on the cerebral hemispheres; thebaine, on the upper dorsal; narceine, on the lumbar region, &c.

And so with other alkaloids: atropia and strychnine, I believe, strike more surely at the root of the sciatica in many cases than does morphia or any opium alkaloid. They produce a more tonic change in the affected nerve; and they do so best when injected beneath the skin.

I have often wondered whether belladonna and its alkaloids fairly reach the affected nerve when given by the mouth—so long may they be given stomachically with little or no benefit. Do they undergo chemical transformation? is a question one may fairly ask. The woorara is nearly inert when taken by the mouth; I have given from three to six grains to a patient in the course of a week without any marked effect, by that plan; but I have paralyzed the legs of a rabbit for many days with only the ninth of a grain when injected.

In painful, spasmodic affections how important it is to be able at once to arrest both the *spasm* and the *pain*.

In severe *colic* in a painter, who for hours had been doubled up in agony, a single morphia puncture relieved the spasm, and of course the pain; and the bowels, which had for some time been confined, acted of their own accord, the castor oil that I ordered having been forgotten by the patient.

Dr. Ward, of Winkfield, has found the morphia puncture successful in this disease.

In *retention of urine*, when due to spasm, this treatment may be often useful, and relieve the patient in a very few minutes. I was led to use it in one case, having no catheter at hand; micturition took place in the course of ten minutes. When no hot bath is at hand, the catheter absent or contra-indicated, I venture to suggest the morphia puncture, as a ready method of relief.

On the 5th of November, 1858, I believe the first case of tetanus

was treated hypodermically; the patient had been admitted into St. George's Hospital, with a gun-shot wound. The injection in this case was morphia, which gave the patient sleep, but the spasms continued unaffected. Since that time, many cases of lock-jaw have been treated hypodermically, and a few cured. The agents that have been injected in this disease have chiefly been the woorara, atropia, nicotine, morphia and aconitina; the operators, MM. Vella, Briquet, Courty, Claude Bernard, Follin, Spencer Wells, Dr. Benoit de Giromagny, Fournier de Souisson, &c., &c.

In epilepsy, the effects of atropia injected seem superior to the stomachic effects, being more permanent in curing the fits, and in lengthening the duration of time between the fits in chronic cases. There seems, as in chorea, a kind of tolerance of this agent in many cases. In paralysis, the strychnia seems in many cases more beneficial than when given by the mouth.

Limited space prevents me from entering further upon this class of cases, interesting as the results are, of atropia in epileptic seizures, and of strychnia in painful and paralytic cases; these may form a subject for future consideration.

I pass now to another important object, with which the hypodermic treatment may be used—namely, to *diminish vascular action and inflammation*.

When morphia and atropia are given by the mouth, very little effect is perceptible upon the pulse. If they make the patient sick, the effect of depression, &c., is secondary; but injected beneath the skin, a primary, direct and very different effect is produced upon the heart and arteries by these two agents; the one as quickly lowers as the other excites the pulse. Dr. Harrington Tuke felt the pulse of a patient with puerperal mania, that I injected in Queen Charlotte's Hospital, go down from 140 to 80 in four minutes. Mr. Holmes, at my request, the other day, felt the pulse of a patient twenty minutes after an atropine puncture; the pulse had risen, as it usually does, to 120. The deduction is, I think, plain that morphia thus administered, may be used as a decided antiphlogistic, but atropine not so. T. B., in St. George's Hospital, in April, 1859, suffered excessive pain in the head, with chemosis and severe inflammation of both eyes. Leeches, blisters, calomel, and opium, and morphia by the mouth every three hours, failed to diminish the pain or arrest the inflammation. The morphia puncture acted like a charm; it completely removed the pain, and the inflammation then rapidly subsided. Dr. Ogier Ward, in 1860, just one year after the above case was described by me as an instance of inflammation, wrote as follows:

“Another conclusion may, I think, be drawn from these cases,

viz: that pain of any kind, neuralgic or inflammatory, may be relieved by subcutaneous injection; and as we can only explain the more rapid action of opiates administered in this manner, by their immediate absorption into the circulation, it follows, as a necessary corollary, that in violent pain from acute inflammation, we need not wait to subdue it by antiphlogistic remedies, but proceed at once to the use of anodynes."

Thus, independently, and from his own experience, Dr. Ward has confirmed my views on the subject.

In *peritonitis* I have found the morphia puncture of great value.

It helps at once to check the three prominent symptoms—the excessive pain and tenderness, the rapid pulse, and the short, quick breathing; it then gives, or *allows*, sleep.

In *ileus*, in a severe case in which there was every symptom of perforation of the bowel, Dr. Godwin tells me he found half a grain of morphia, injected beneath the skin, to relieve all the urgent symptoms in about ten minutes.

In ophthalmic practice, Dr. A. Von Grafe has found the hypodermic injection of especial value; and has written a paper to show the various objects with which it may be used in ophthalmic surgery.

In *ague* and *fever*, the hypodermic injection has been extensively used, especially in the Smyrna Hospital, by Drs. Chasseau and McCraith; also by Dr. Moore, of Bombay; also more recently by Dr. Desvigne in France. All these physicians agree in the superior efficacy of quinine, when injected into the cellular tissue, over the stomachic doses. The same rule holds good with quinine as I had shown was the case with morphia, viz: that a lesser quantity was equal to a greater, given by the mouth. "Four or five grains," says Dr. Moore, "are equal to five or six times that amount by the mouth."

I must protest once more against the way all these gentlemen introduce the quinine—namely, with a syringe after incising the skin with the *lancet*! According to Dr. Desvigne, abscess and sloughing of the cellular tissue are results not extremely uncommon, but such as, I think, should never occur.*

For the various forms of *uterine pain*, especially for dysmenorrhoea, the hypodermic treatment has been used by Dr. H. Bennett, of Mentone. In all cases, he says, he obtained the benefit in from fifteen to thirty minutes, without any of the drawbacks which follow the stomachic administration.

* If morphia, or any of the alkaloids, simply in suspension, be injected hypodermically, abscesses and sloughing are frequently produced. This misfortune will be prevented, by adding, to the liquid, a sufficient quantity of the appropriate acid, to produce a true solution. The alkaloid, if in suspension only, acts as a foreign body.—Ed.

I cannot conclude without remarking, though very briefly, on the use of this treatment for incurable disease. In my own hands it has been a boon to many patients for months, perhaps, together, some with incurable neuralgia, others with cancer, or the agony of diseased joints. Life is made bearable by this plan to these poor sufferers. The economy of the amount of the anodyne required holds good in the majority of these cases. Dr. Giles tells me that he has now a case of cancer under his care in which one-third of a grain injected on alternate days, gives all the relief that two grains daily had previously given by the mouth. Such has often been my own experience in this disease. In the cancer wards at the Middlesex, Mr. Watts and others, tell me that morphia puncture has for a long time been the main treatment employed, some patients being injected once, others twice, daily. As an *antidote*, and as a diagnostic test, I have long since ventured to propose this plan as the most reliable in cases in which the agent to be employed is fairly soluble.

[*Medical Mirror.*

3. *On the Absence of Chlorides in the Urine of Persons affected with Variolous Diseases.* By J. C. M. MERILLAT, M. D., General Hospital, Staunton, Va.

The great importance of being able to form an early and reliable diagnosis in all cases resembling small-pox, induces me to request the attention of your readers to the value, as a diagnostic symptom in that disease, of the presence or absence of the chlorides in the urine.

Careful observations of six cases of variola, of one of varioloid, of five cases which were supposed to be small-pox, but proved otherwise, and of three of rubeolæ, (all that have lately occurred at this post,) have led me to the following deductions, which I respectfully request those of your readers who may have more extended fields of observation to verify :

1st. That the chlorides are never present in the urine, during the two first stages of small-pox.

2d. That they are absent from the beginning of the eruptive fevers—how much earlier, if at all, I have had no means of ascertaining ; that, therefore, patients complaining of fever, pains in the back, etc., may be safely left in their wards, *if the quantity of chlorides in the urine be normal.*

3d. That the period of the reappearance of the chlorides depends upon the intensity of the disease. In the distinct variety they reappear between the eighth and fourteenth day of the eruption. Of the only two cases of confluent small-pox, which I had an opportu-

nity of observing lately, one died on the eighth day of the eruption, and in the other, this day is the eleventh day of the eruption, and the chlorides have not yet returned. I am, therefore, unable to form an opinion in such cases.

4th. That the quantity of the chlorides in the urine of patients laboring under rubeola is normal during the whole progress of that disease; but it would not be safe to infer from this, that every patient attacked with fever, pains in his back and head, vomiting, etc., and from whose urine the chlorides are absent, is necessarily laboring under the eruptive fever of small-pox, for I saw lately three patients, in whom all, or nearly all, of these symptoms were present, and who recovered without any eruption. One of them says that he has never been vaccinated, and a careful examination of his arms failed to reveal any scar; neither does he know how to milk; therefore, it could hardly have been a case of varioloid without eruption.

The only disease, besides small-pox and the three cases above alluded to, in which I have found the chlorides absent in the urine, is pneumonia, though I suppose further researches will swell the list.

To enable your readers to form an opinion as to the value of the observations from which the above deductions were drawn, I add the method which I have pursued in testing urine and one of the cases above mentioned:

To a small quantity of urine in a test tube, or in a clean, long, and narrow phial, I add about one-sixth of its bulk of nitric acid, which I have previously ascertained not to contain any chlorohydric acid. I then add the same quantity of a strong solution of nitrate of silver, when a beautiful white curd forms, if any chlorides are contained in the urine, and more or less abundant according to their quantity. I find that only a few drops of nitric acid, as recommended by some writers, does not prevent the phosphates (often present in abnormal quantities, both in small-pox and pneumonia,) from being precipitated, and they may mislead. I would prefer not adding any nitric acid, than an insufficient quantity, as the phosphates can easily be distinguished from the chlorides, for a minute or two after adding the nitrate of silver, by their reddish color and floccular appearance.

CASE—*Pemphigus, Variola*.—D. R. K., company "K," 14th North Carolina regiment, age 40, a farmer, was admitted October 22, 1863, with typhoid fever, on recovering from which, a large abscess formed over the parotid gland. This did not heal completely till about the middle of January, 1864. He says that he was vaccinated during childhood, and that he has often seen the scar. He also says that he was re-vaccinated four times last win-

ter unsuccessfully, though the same matter was used successfully with his children.

On January 23d, 1864, he awoke with fever and pains in his back; did not complain of headache, but of "itching" all over the body. On January 24th, an eruption of small red points on his forehead, and the same, mixed with vesicles (from quarter of an inch in diameter down), on his breast, attracted the attention of his ward surgeon, who asked for a consultation. The urine was tested and the chlorides found to be normal. He was ordered to be removed to a small room by himself.

January 25th.—*Chlorides still normal.* Eruption on the forehead rather more distinct; some of the vesicles on the breast larger (three-eighths of an inch diameter) and more opaque. On consultation with all the medical officers in the hospital, three of them expressed the belief that it was a case of pemphigus; the others believed it to be a somewhat abnormal case of small-pox. The next morning, however, on the report of some surgeons that it had assumed all the appearance of small-pox, the man was ordered to the small-pox hospital. Three or four days after his admission there, the eruption on his forehead disappeared entirely, whilst that on his breast went through the changes which are characteristic of pemphigus, except that the bullæ were not near as large as usual. The urine was tested every day during that time, and *invariably the chlorides were found to be normal.*

February 9th.—Awoke with severe pains in his loins, fever and vomiting, which continued the whole day. Tongue with a yellowish fur, mostly in the centre. *No chlorides in the urine.* Patient to be kept as cool as possible; no coffee or any other hot and stimulating drink.

February 10th.—Same as yesterday. *No chlorides in the urine.* Towards evening an eruption of minute elevated papulæ began to appear on the forehead. He was ordered a mercurial purge.

February 11th.—Tongue still considerably furred in the centre. Anorexia. Pains in the back continue. Eruption of variola more distinct on the forehead. *No chlorides in the urine.* Throat sore. To use as a drink a solution of chlorate of potash, one ounce to a pint of water. Bowels have been freely moved.

February 12th.—Tongue still furred. Appetite returning. Throat better. Eruption very thick on the face; less so over the body. *No chlorides in the urine.* Pains in the back continue.

February 13th.—Has been very restless during the night. Pains in the back continue. Vesicles on the face very numerous, and in some cases threaten to become confluent. Ordered the whole face to be covered with a plaster of carbonate of zinc two parts, oxide

of zinc one part, rubbed into a paste with peanut oil. Throat still improving. *No chlorides in the urine.*

February 14th.—Rested badly last night; frequently rubbed off parts of the plaster, which seems to have been too thin (about the consistence of thick paint.) Not having any more of the carbonate of zinc, used flour instead of it. Tongue clean and moist. Appetite better. Bowels rather costive. Ordered a laxative. *No chlorides.*

February 15th.—Appetite moderate. *No chlorides.*

February 16th.—Pustules matured on the breast, and maturing on the legs, very numerous, but distinct from the knees down. Plaster covers the face completely. Eyelids not swollen at all, though he says his eyes hurt him at times. Bowels regular. Appetite better. To have three ounces of wine daily.

February 17th.—Doing well. *Slight traces of the chlorides in the urine.*

February 18th.—Says he feels well to-day. No fever. The electrotic plaster fell off in some places to-day, and was not reappplied, as the pustules under it did not look as if they would fill. Strict injunctions were left with the nurse, however, to reapply it, if he saw the least sign of their filling. *Chlorides deficient* (not absent.) Phosphates abundant.

February 19th.—Sitting up. *The chlorides have returned*, but the urine is very turbid, and loaded with phosphates.

February 20th.—Continues to improve. Urine clear. *Chlorides normal.* Pustules on the face aborted; their appearance is that of large (quarter of an inch diameter) hemispheres, of natural colour.

February 29th.—Still improving. Colour of the face natural, rather bleached. No red spots like other convalescent small-pox patients.

March 5th.—Discharged from the small-pox hospital, with but two "pits" about the face (doubtful whether from the small-pox), but much pitted about the body and limbs. No appearance of the pemphigus.

As somewhat connected with the above, and as it may be interesting to those of your readers who may desire to make observations on the urine in different diseases, but who, like myself, are unable to procure a microscope of high magnifying powers, I shall add that I have found one magnifying 100 linear diameters sufficient for that purpose. At least, I have repeatedly observed all the crystals (with the exception of cystine) delineated in "Bennett's Clinical Lectures," with an instrument of that power. I believe that the plates on the urine in that work ought to have been marked 75 diam. instead of "250 diam."—*Confederate States Medical and Surgical Journal.*

CLINICAL LECTURES.

1. *Clinical Remarks on the Operation of Version.* By T. GAILLARD THOMAS, M. D., Professor of Obstetrics and Diseases of Women, Col. Physicians and Surgeons, New York.

Few operations, either in general or obstetric surgery, have, within the past half century, undergone greater improvements, than that which forms the subject of this paper.

Historical Sketch.—In the earliest days of the Greek School of Medicine, the operation of cephalic version was understood and practiced. At a later period, podalic or pelvic version, was advised in cases where the child had ceased to live; and in the days of Aetius, who flourished 500 years after Christ, it was practiced in cases where the child still lived.

It was not, however, until the time of Ambrose Paré, who lived in the latter part of the 16th century, that the operation was fully understood, and it was by the efforts and enterprise of this surgeon and his pupil, Guillemeau, that it was placed upon its proper basis, as one of the most valuable and life-saving at the command of the obstetric surgeon.

I have no intention of entering fully into the literature of this subject, and will conclude what relates to its ancient history by saying, that, at the beginning of the present century, two methods of performing the operation were known and practiced; one, the operation of podalic or pelvic version; the other, that of cephalic version. Both were performed by the instrumentality of one hand introduced into the cavity of the uterus.

Objects of Version.—The objects of the operation may be defined, as being the substitution of one presentation for another, which can be brought into the pelvis, only by making the body of the child revolve on its axis. The part thus substituted, must be either the cephalic or podalic extremity of the foetal ovoid, and this alternation may be demanded under the following circumstances: First, the child presenting transversely, and labour thus being rendered impracticable, either of the extremities of the long diameter may be brought down; 2d, the cephalic extremity presenting, and immediate delivery being demanded, (which the forceps cannot accomplish, owing to the early period of the labour,) the podalic extremity may be brought down; 3rd, in certain rare cases, where the podalic or pelvic extremity presents, and the labour is not advanced, the

cephalic extremity may be brought down and substituted for that previously in the pelvic canal, and which would have passed through with infinite risk to the life of the child.

Varieties.—These circumstances naturally divide version into two great varieties, cephalic version and podalic or pelvic version. But there are, at present, known to, and practiced by the Profession, several methods of performing each of these, and this causes a subdivision, which may be tabulated thus :

Version,	{	Cephalic,	{	External,
		Podalic,		Bimanual, Internal.

That is to say, cephalic version may be practiced, 1st, by external means ; 2d, by the bimanual method ; or 3rd, by the internal ; and, for convenience, we speak familiarly of these methods as external version, bimanual version and internal version, whether it be cephalic or podalic, to which allusion is made.

The object of this essay is to develop some facts, connected with the first two of these methods. The last, which is the old method introduced by Paré, is so thoroughly understood and generally practiced by the entire Profession, as to need no special notice here.

History of External and Bimanual Version.—We now return to the point at which we broke the thread of our historical sketch, viz : at the end of the 18th century. The manifold objections attaching to the operation of internal podalic version, must have been evident to those who lived before this time, for the great mortality for the child, which always attended, and ever must attend it, and the dangers to the mother, which cannot, even by the greatest care, be entirely avoided, must have forced the fact upon their attention.

Internal cephalic version was found so difficult of performance, that it was very rarely resorted to.

Until the beginning of the present century, however, no great improvements were suggested in reference to the subject, when Wigand, of Germany, distinctly stated the fact, that, by manipulations practiced upon the abdomen, the child could be made to revolve upon its axis in utero.

It is true, that as early as 1698, John Peechey, of England, made a similar statement, but until the time of Wigand, no special attention seems to have been paid to it. Even after his time, this, like so many other important discoveries, was for a long time allowed to lie fallow, indeed, until the last ten years. In 1855 Professor Mattei, of Corsica, published a treatise upon it, which

brought it prominently before the Profession, and not only proved its possibility, but gave such clear and distinct rules for its performance, as to place it at once within the power of any competent obstetrician.

Since that time, the operation has rapidly risen in favour. Cazeaux, Esterle, Nœggerath, Elliot, Barker, and a number of other prominent obstetricians, have written upon it, and to-day, version, by external manipulations, is every where an admitted and well established resource in obstetrics, and its practice is yearly saving many lives, which would, by the old method, be sacrificed.

Some years ago, Dr. Braxton Hicks, of England, recommended a modification of this, by which one hand is passed into the vagina, and the other made to manipulate the child externally. He wrote at length upon this method, and gave to it the name of bimanual version.

I shall now proceed to describe each of these methods, and give cases illustrating their practice.

Method of Performing External Version.—The time most favorable for this procedure, is early in labour, before the rupture of the waters, or during the latter part of pregnancy, before labour. Even after rupture of the waters, it may, however, prove successful, though after this has occurred, and the establishment of uterine contractions, it will almost always fail. Its results are, substitution of the pelvic or cephalic extremity for a transverse presentation, substitution of the cephalic extremity for the pelvic, or substitution of the pelvic for the cephalic, when it is desirable to perform version to expedite delivery.

The obstetrician, having determined that external version is practicable, causes the patient to lie upon the back, with the feet drawn up, so as to flex the thighs. He then makes out, carefully, the position of the foetus by palpation, and if it lie transversely, he presses the tips of the fingers of one hand under the breech, and places the palm of the other upon the head. In an interval of rest, he now lifts the breech towards the fundus, while at the same moment, he presses the head down into the superior strait of the pelvis. If it were desirable to bring the breech down, to expedite delivery, of course the force distributed to the extremities of the foetal ovoid, would be reversed. If the pelvic extremity of the ovoid occupy the superior strait, one hand is placed against the head at the fundus, and by it, this part is pushed to one side, while the tips of the fingers of the other are inserted under the breech, and it is lifted up (in an opposite direction from that followed by the head) towards the fundus.

The following cases are illustrative :

CASE 1.—I was called one evening, in the month of May, 1864, to see Mrs. P., a lady who was now at the end of her fourth pregnancy. As I entered the room I noticed that she was in tears, and upon questioning her as to the cause, learned the following facts: About two hours before I saw her, the liquor amnii had poured away without any sign of labour coming on, and by placing her hands on the abdomen she had felt at the fundus a round, hard ball, which she was confident was the child's head. A friend of hers had once lost a child in its birth, from this mal-position, and she felt sure that she would lose hers.

"You need not try to deceive me, Doctor," she said, "for I know that my child is not fixed right in my womb." Examination by the vaginal touch and palpation, proved her surmise to be correct. A large breech could be felt through the os, which was about the size of a circle, whose diameter is one inch. My patient was a very sensible and reasonable woman, and I at once explained the whole matter to her, telling her, furthermore, that it was possible, since no uterine contractions had occurred, and the organ was remarkably lax, that by external manipulations, I might put her child out of danger. She was eager to have the experiment tried. Accordingly I placed her upon her back in bed, caused her to flex the thighs and relax the abdominal muscles, and by one hand pressed the child's head to the left side, while by the fingers of the other, I lifted the breach towards the right. In less than five minutes, the child turned completely over in the uterus, by a sudden movement, and both palpation and the touch by the vagina, conveyed to me the grateful intelligence, that the head presented at the superior strait. My patient would not, at first, believe that this result had been accomplished, but upon examining the tumour at the fundus, was readily convinced.

The labour came on the next day, naturally, and a large boy (whose sex I had ascertained on the previous evening) was safely delivered.

CASE 2.—Mrs. D., a lady who was at the end of her second pregnancy, sent for me at 4 P. M., in the month of October, 1864, on account of commencing labour. I found her seated in a rocking-chair, in company with her nurse, a garrulous old woman, who had greatly alarmed her and her friends, by declaring that she had a "cross-birth." Mrs. D. had, in her previous confinement, been attended at the West by a female physician, and being withal, a weak woman mentally, stubbornly refused submitting to an examination, until I worked upon her fears, by substantiating the correctness of the nurse's diagnosis. Then she yielded, and I found that I was right in risking the assertion which I had made upon

the statements of the nurse. Upon vaginal examination, the bag of waters was felt pouching downwards like a long funnel, and no presenting part could be felt; even when the finger was carried as high up in the pelvis as possible. Upon abdominal palpation, the uterine tumour was found to present its longest diameter laterally, instead of perpendicularly, and in the left iliac fossa, could distinctly be felt the hard round head, while in the lumbar space, on the opposite side, could be distinguished the rotundo, but softer mass of the breech. The patient was so intractable, that I at once proceeded to practice external version, while she sat in her chair. Fortunately, the operation was extremely easy of accomplishment. Placing the palm of one hand against the breech, I pushed it upwards towards the median line, while at the same moment, I depressed the head with the other hand placed above it. The revolution of the foetus was at once effected, the waters were evacuated to secure the continuance of the favorable presentation, and the labour was, in due time, safely accomplished. Although I could, from my own experience, and that of my friends in this city, add other cases to these, I shall not do so, as these accomplish all that I desire in the way of illustration. There is scarcely one prominent obstetrician in this city, I will venture to say, who has not performed this operation, and many have done so a number of times.

Bimanual Version.—Although hundreds practiced this method, before its description by Dr. Hicks, it is but right that we should accord him the credit of its discovery; for, before he described it, it was an irregular, unsystematised procedure. He has simplified it, and made it a systematic operation.

It may be performed before the rupture of the bag, in cases where the external method has failed, or after that time and before the foetus has become too firmly clasped by the uterus, or too much engaged in the pelvis.

If the child present transversely, it is thus proceeded with: Suppose the head to lie in the left iliac fossa, and the breech in the right lumbar region; the operator would prefer, of course, to alter the presentation to a cephalic one, and he thus proceeds to do so: Passing two fingers of the left hand up the vagina, their tips are pressed against the part which they reach within the uterine mouth—say, for instance, the ribs. This pressure is so exerted as to push the pelvic extremity of the foetal ovoid up towards the fundus, and, when the part first pressed upon has passed out of reach, the fingers are placed upon the shoulder, and it is pushed in the same direction. While this is being done, the other hand, placed upon the abdomen, acts alternately upon the breech and head, pushing the former up, and the latter down.

If it be desirable to bring the breech down, of course all this is reversed.

Where the head presents, and podalic version is to be performed, this method often becomes a most precious one, preventing the necessity of the introduction of the hand into the uterus, and thus sparing the mother a great deal of danger.

In this case, the vaginal pressure is made against the head, which is pushed to one side, while the abdominal pressure is exerted, so as to force the feet down towards the os, where they may be seized by the fingers of the hand which is in the vagina, and version be accomplished.

The two cases which follow are illustrative :

CASE 3.—I was called by Dr. Bahan, of this city, to see, with him, a case of labour, in which the arm was presenting. The patient had, I found, been in labor for a number of hours, before sending for, or at least finding the Doctor, and upon his arrival, he found the right arm far down in the vagina. Upon examining, I found the head in the left iliac fossa, and the buttocks high up on the opposite side. Explaining what I intended trying to Dr. B., at the same time that I expressed a decided opinion that the method would fail, and leave us no resource but internal version, I introduced one hand into the vagina, and returned the arm of the child to the uterus, the patient being under the influence of chloroform. Putting two fingers of this hand against the shoulder, I now pushed it to the right, and its ascent I aided by pushing the breech up towards the fundus. Very soon the head could be felt by the fingers in the os ; and now, putting my disengaged hand upon it, I forced it very readily to enter the pelvis.

A bandage was now applied to the patient, to prevent a return of the mal-presentation, and I left the house. Dr. Bahan informed me, a few days after, of the safe delivery of his patient.

CASE 4.—I was called in January, 1866, by Drs. Bishop and Sawyer, of New York, to see Mrs. D., a very delicate, scrofulous primipara, who was in the seventh or eighth month of pregnancy. She had been taken, about twenty-four hours before I saw her, with most violent puerperal convulsions, which had continued all day, (I saw her at 1 P. M.,) leaving her entirely comatose in the intervals between them. The surface of the body was cold, nails and lips blue, pulse one hundred and forty to the minute and very small, and patient's state, in every respect, unpromising. Upon investigation, uræmia was found to be the cause of the seizures. She had been treated very judiciously by the physicians in charge of her, and as no abatement in the violence of the attack showed itself, I advised that labour should be induced. This being concurred in, I

examined *per vaginam*, and found the os about the size of a half dollar. Introducing into it my fingers, I gradually dilated it, and in twenty-five minutes had enlarged it to double that size. By means of the hand in the vagina, I now pushed the head as far to one side as I could, while by the other hand placed on the abdomen, I alternately pressed the head up and the breech down. In a few minutes, two fingers carried through the os, reached the feet, and I at once drew them down and delivered. I must mention, that before resorting to the bimanual method in this case, I had tried and failed with the external.

By this means, I avoided introducing my hand and arm into the uterus of a woman, who was naturally very feeble, whose pregnancy was not beyond the eighth month, and who was exhausted by a very difficult labour. After delivery, the uterus contracted firmly, and I heard nothing more of the patient till yesterday, when Dr. Sawyer informed me that she had no more convulsions, and recovered rapidly.

This essay has already exceeded the limits, which, at its beginning, I had allowed myself, and I shall now conclude it with an enumeration of the reasons which appear to me to prevent the rapid recognition of these methods of version, as great boons to physician and patient.

1st. The operation of internal version is so rapid and efficient, that many are content with it, and seek for no improvement, forgetful of the fearful foetal and maternal mortality attending it—one in three foetal, one in sixteen maternal.

2nd. The practitioner, not touching the presentation, waits until it becomes evident, instead of making his diagnosis by palpation, auscultation, &c. The precious time lost in waiting, allows the time for the performance of external and bimanual version to slip away, never to be recalled, for after the uterus clasps the child firmly, and the presenting part is fully engaged, nothing but internal version will effect the result desired.

3d. A certain number of practitioners satisfy their scruples in not availing themselves of the best resources of their art, for the benefit of their patients, by disbelieving what they have never tried, and undervaluing what they have never troubled themselves to understand.

The first of these courses is flippant and illogical, while the second is absolutely culpable.

ORIGINAL CORRESPONDENCE.

LONDON, *February*, 1866.

I have no doubt that the plan of treating acute rheumatism, by blisters, is already familiar to many of your readers, but as possibly some may not be acquainted with it, I think the importance of the subject is sufficient to excuse a brief reference. This method of treatment has been introduced by Dr. Herbert Davies, of the London Hospital, who has practiced it in a considerable number of cases, with apparent success. The treatment consists in applying blisters (by means of the acetum lyttæ) over all the affected joints. By this means, the materies morbi is supposed to be eliminated very rapidly, and with less depression than follows the alkaline treatment, which has lately been the favourite in this country. The theory of the latter is, of course, that the lactic acid, which is supposed to constitute the morbid material, is neutralized by the excess of potash supplied to the blood, and passes out chiefly by the urine. The quantity of potash given, however, exerts a considerable amount of depressing influence on the patient, and convalescence is often prolonged. By the blistering treatment, on the other hand, it is supposed that the lactic acid is directly removed in the serum. All the affected joints are blistered at once; six, eight or ten blisters being sometimes applied at a time. Dr. Davies has assured me that the patients, so far from complaining of the treatment, express themselves as wonderfully relieved by it, and should any other joint be subsequently affected, they beg for the blistering to be repeated. That relief should thus follow the evacuation of serum, appears but natural, if we consider that the intense pain is due chiefly to the great tension of the parts about the articulation. Of course, the real specific for acute rheumatism, would be a drug which would prevent or arrest the formation of the morbid poison; but until this has been found, we must be content with attempting to combat its effects, and to eliminate it as speedily as possible; for the latter purpose, the blistering treatment appears to be the most satisfactory, as yet propounded.

A new plan for producing local anæsthesia has recently been brought to the notice of the Profession, by Dr. B. W. Richardson, who some time ago proposed galvanism with the same object. Galvanism, it will be remembered, appeared to succeed in some cases, but entirely to fail in others, and it has finally been abandoned, on account of the great uncertainty of its action. The principle of the method now proposed, is a combination of the action of cold, with that of an ethereal anæsthetic. The mode of application appears to have been suggested by the toys, lately in vogue, for producing a spray of eau de cologne or other perfume. Dr. Richardson at first tried passing the ether spray through a tube cooled by a mixture of ice and salt, and allowing it to be poured in a jet of vapour on the part to be anæsthetised. By this means, complete anæsthesia of the part was rapidly induced, and teeth were abstracted without pain; but the use of the freezing mixture was found to interfere with the working of the apparatus, which was found to be liable to be blocked up by a particle of ice at any part of the performance. He then tried the effect of sending the jet of ether spray with greater force and rapidity through the opening, so as to produce the same degree of cold, without the use of any freezing mixture whatever. This he accomplished by means of an apparatus, of simple construction, manufactured by Messrs. Krohne & Sesse-mann, and consisting of a bottle to hold the ether, through the cork of which, a double tube is passed, the outer tube terminating in a fine opening above, and the inner tube reaching below to near bottom of the bottle. Another tube, to which a small pair of bellows is attached, opens into the outer tube, at right angles, above the bottle. The air, forced by this means into the outer tube, passes in two directions—downwards, so as to force the ether up with the inner tube; and upwards, so as to drive it in a jet of spray through the opening in the outer tube. In this way Dr. Richardson says he can produce a degree of cold equal to 4°, or even 6° below zero of Fahrenheit, in the course of about a minute. With this application several teeth have been extracted without pain, and other superficial operations have been performed, the anæsthesia being very rapidly produced, and the parts recovering their healthy state in each instance.

This method requires more extended observations, before its value can be considered as established, but it certainly seems to deserve attention, though it can, perhaps, only be expected to be available for superficial observations. It may also, at present, be considered an open question whether the ether itself, produces any very marked anæsthetic effect, when applied in this manner, or whether the anæsthesia is not mainly due to the abstraction of heat, and, therefore, on a par with that produced by the freezing processes advocated some time ago by Dr. James Arnott.

The endoscope now claims a certain amount of attention here, and perhaps you will not consider a brief description of it, out of place in this letter. It has recently been introduced to public notice by Dr. Cruise, of Dublin, who has published the results of his investigations in the Dublin Medical Journal, but the instrument used by him is identical in principle with one used so long ago as 1824, by Mr. Fisher, of Boston. It consists of an exploring tube, with a perforated mirror placed at an oblique angle over its larger end, and arranged so as to throw a strong light down the tube, and to allow an observer to look through the hole, in the centre of the mirror, down the tube, upon the illuminated surface below. The great difficulty seems to have been, to apply a sufficiently strong light, and this, Dr. Cruise has succeeded in doing, by the thin edge of the flame of a lamp burning petroleum, containing ten grains of camphor to the ounce. This small lamp is appended to the side of the endoscope, and can be worked by a screw, so as to bring the light accurately opposite to the mirror of the latter.

The essential part of the endoscope, as employed by Dr. Cruise, consists of a cylinder, which contains the perforated mirror (*m*), with a defending perforated screen (*s*) to protect the eye from the glare, and a side tube, (*t*) which is fitted to that of the lamp to convey the light to the reflector. The end of the cylinder, to which the mirror faces, is narrowed, and adapted to receive other tubes, varying in kind, according to the nature of the part to be explored.

The urethral tube, (*u u*) here represented as fitted to the endoscope, is merely a large open-end catheter, six inches long, with a long slit, at the side most distant from the lamp, through which

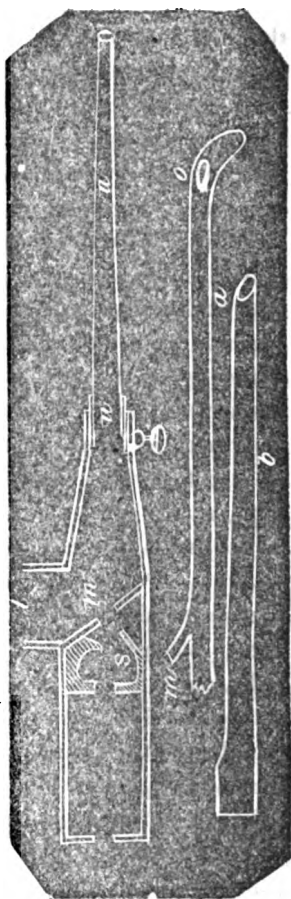
cleaning plugs, probes, and cutting instruments may be introduced without disturbing the apparatus.

For exploring the bladder, another instrument, called the *cystoscope*, is used, instead of the straight catheter. This is more complicated, owing to the necessity for washing the bladder well out, and leaving only clear water, moderately distending it before inspection.

A large catheter (*a*) is first introduced, having a side mouth, (*m*) and an opening (*o*) at the end of the straight portion, to allow of the direct inspection of anything in the axis of the tube. Down this tube a long, elastic catheter is passed, and water pumped into the bladder continuously, till the stream discharged from the side mouth is clear. Then the elastic catheter is withdrawn, and its place taken by a tightly fitting straight tube, (*b*) with an obliquely placed window at its lower end, and to this tube the endoscope is fitted on.

Dr. Cruise has worked assiduously at the construction of the endoscope, and refers in a liberal spirit to the labours of others; and there is no doubt but, that in the hands of those who devote much attention to its use, it will prove of real service in the diagnosis of the nature of obscure and intractable diseases, of hitherto hidden regions.* Indeed, Dr. Cruise himself does not despair of being able to explore the stomach before long; but to the majority of the Medical Profession, the fact of the instrument only being in occasional requisition, together with the necessity of a lengthened study of the healthy and morbid appearances exposed to view, will most likely debar it from becoming very extended in application.

* This instrument has recently been successfully used, for examining, minutely, the interior surfaces of the uterus.—Ed.



Already, however, light has been thrown by it upon the nature of urethritis, by Desormeaux, and by Cruise. In long standing gleet, they almost invariably find the mucous membrane of the bulbous portion of the urethra, in a condition identical with that of granular conjunctiva, and this condition, (chronic granular urethritis,) Dr. Cruise believes, constitutes a transition stage between the acute inflammatory constriction of gonorrhoea, and its final issue in organic stricture. The same condition is also found in intractable orchitis. It is treated by Dr. Cruise, by the direct application of caustic solutions through the side slit in the endoscope. By introducing cutting instruments through the same slit, he divides strictures directly, and to a definite extent, under his own eye. He makes some interesting censures upon strictures, and believes, from the evidence of two cases, that perineal section, or tapping the bladder, may be avoided in many cases of strictures from retention, by the use of the endoscope, which permits of ocular observation of the seat of stricture, and thus may enable the operator to pass an instrument into the bladder, when he could not do this in the ordinary way.

With regard to the bladder, Dr. Cruise proves satisfactorily the real efficacy of the instrument; for after detailing the appearances of different parts of the viscus, and stating his belief that encysted stones might be detected, he adds an experiment which he had just performed, and which I cannot give better than in his own words: "My colleague, Dr. McDonnell, first prepared a subject by opening the bladder and introducing into it three substances of a nature the most unlikely to be thought of, and respecting which, I was in total ignorance. He then brought me to the body, and challenged me to tell with my endoscope what the articles in the bladder were. In a few minutes I was able to do so, and to demonstrate them to him. The articles were, a brass screw with a milled head, a short Minie bullet, and a mass of plaster of Paris."

Yet, another "scope" has just been added to the list. This is the *stomatoscope*, invented by Professor Bruns, of Breslau. It consists of a small platinum coil, protected by a boxwood cup, in which is placed a small mirror. This is connected with a battery, and gives off sufficient light to render the jaw translucent when

placed in the mouth. It is said, that by means of this instrument, the vessels can be seen traversing the bone and entering the teeth, and that the smallest spots of caries can be detected by it. If such be the case, it can hardly fail to be an instrument of service, both to the dentist and to the physiologist.

A very useful means of dilating strictures of different parts, is furnished by a marine plant—the *laminaria digitata*. It is rolled up into solid or hollow sticks, of any desired thickness, which, by the imbibition of fluid from surrounding parts, swell to about four times their original diameter. The hollow cylinders exposing a larger surface, dilate much more rapidly, while the solid ones, though slower in action, dilate to a greater extent. It has been chiefly used for strictures of the rectum, but its applicability to other strictures, is becoming recognized. There are, however, two dangers attending its use. The first is, that from imperfection in its structure, and from its softening as it swells, a piece may be left behind, and prove of serious inconvenience; the second, that if the stricture is very firm, the tent may be immovably held, enlarging hour-glass-like, on each side of the constriction, and prevented from doing so equally at the stricture itself. On these accounts it is not used for the urethra. It is, however, well adapted for introduction into the puncta lachrymalia, in cases of contracted orifice, since it can be rolled into a tolerably fine point. It can also be satisfactorily employed, for rapid dilatation of the female urethra, prior to the removal of stone or the performance of lithotrity.

It will be remembered, that in my last, I expressed some hope that the cattle plague, which is now raging so furiously here, might prove identical with human small-pox, and that thus we might find a remedy in vaccination. This hope, however, has been dissipated by subsequent investigations. There was certainly evidence of great similarity between the two diseases; quite enough to raise the question of their identity. As the result of numerous experiments, however, it has been found that animals which have been successfully vaccinated, take the cattle plague when exposed to contagion, equally with those which have not been vaccinated. Dr. Murchison, who was one of the strongest advocates of the small-

pox theory, now acknowledges the failure of vaccination. We have, therefore, only to trust to those restrictive and protective measures, which were advocated by scientific men at the outset. Parliament having met, a bill is being passed to render compulsory, the slaughtering of diseased and suspected animals; at the same time, providing for the compensation of their owners. Transit of live cattle by railway is also to be prohibited. If these measures had been adopted three months ago, they would have been much more rapidly and completely successful; but at that time, neither the Government nor the public appears to have been aware of the extent of the evil.

Since writing the above, I have seen (in the Medical Times and Gazette, of to-day,) a further communication from Dr. B. W. Richardson, on the subject of his new method of producing local anaesthesia. He states that it is necessary, for the success of the method, that the ether should be perfectly pure and free from alcohol, as the latter is irritating; pure ether producing no irritation whatever. The chief tests, he suggests, are the specific gravity, the boiling point, (pure ether boiling in the warm hand,) and the absence of irritation, when taken into the mouth. He states that he has used the apparatus in forty-three cases, in thirty-six of which, it was completely successful, and in the remainder partially so; the want of complete success in the latter, being due to impurity of the ether, or to some defect in the management of the apparatus. He also states that the spray directed on a part suffering from neuralgia, entirely removes the pain.

NEW YORK, *March 20, 1866.*

Within the last week or two, all of our Medical Colleges have closed their sessions, and sent forth their annual swarm of Doctors in Medicine. The Schools of New York have this year graduated the largest number on record. I think it safe to add, that the scholarship of the classes has been unusually good, much above that of former years. It is a matter of common observation, that the intellectual grade of medical students has rapidly improved within the past few years. There is a much larger average who have a

liberal education, and many more who are from the higher ranks of society. This improvement is gratifying, and should encourage us to hope, that the day is approaching when the Medical Profession will take higher rank in the public estimation.

The first school to close its session was the Bellevue Hospital Medical College. This was the fifth Annual Commencement of that institution, and it presented for graduation a class of one hundred and seventy. The exercises were held in the Academy of Music, and though the evening was stormy, this enormous hall was filled. The charge to the graduates, by the President, Professor J. E. Taylor, was a chaste and appropriate production, abounding with excellent advice and kind and encouraging words. The address by Wm. M. Evarts, Esq., was humorous, pathetic and eloquent. He kept up a running fire on the three learned Professions, the legal coming in for no inconsiderable share.

The Valedictory, on the part of the graduating class, was by Leroy Yale, and was flatteringly received by the audience.

The Commencement of the College of Physicians and Surgeons occurred a few days later. The number of graduates from this School was upwards of one hundred and twenty, in a class of four hundred and sixty-five. This is the largest class which that School, now in its fifty-ninth year, has assembled, and the largest list of graduates. The charge of President Delafield contained a timely warning to the young Physicians, against that most dangerous of all vices—intemperance. Rev. Dr. Weston addressed the graduates, and then followed the Valedictory and the announcement of the numerous prizes. This latter feature of the Commencement is very interesting, and deserving of commendation. Two prizes are annually awarded for the best two graduating theses, presented during the year—viz: a first prize of fifty dollars, and a second prize of twenty-five dollars. Three annual prizes are also offered for the best three written reports of the clinical instruction in the New York Hospital, during any four months of the year immediately preceding the Annual Commencement in March, which shall be prepared and presented, by students of the College—viz: a first prize of one hundred and fifty dollars; a second prize of seventy-five dollars, and a third prize of twenty-five dollars; with each prize there is conferred

a Harsen prize medal, in bronze, of elegant design and workmanship, and an ornamental certificate on parchment.

The University Medical College graduated a class of seventy-five. An interesting and novel feature of the exercises, was a poem, by Professor Post ; or rather, his address to the graduates was in blank verse. Many were quite taken by surprise, who have regarded the learned Professor from that stand-point, where they observed only his stern, practical, and matter-of-fact character ; but those who know him more intimately, were aware that he has long wooed the muses in private, and were not surprised at this sudden and public announcement of his success. The effort was a happy one, and added new laurels to a well-earned fame. In this School, also, a large number of prizes are annually distributed to the meritorious.

In this connection, I cannot refrain from saying one word in regard to the system of Medical Education in practice in this country. In my opinion, it could not be much worse. The whole aim of our Schools is to congregate large classes. Success is measured by quantity—not quality. Students are solicited, not only by fictitious advantages, but by removing all pecuniary restrictions. In some instances, messengers have been sent into the high-ways and byways to compel them to come in. When will this disgraceful rivalry to catalogue the largest class cease ? Not until the whole system of Medical Education is changed. Our Medical Colleges must be placed on the same basis as literary Colleges. The course of study should extend over four years, and be so divided, that the student passes regularly through the several gradations ; the College should be in perpetual session, with proper periods of vacation ; didactic teaching should form but a small part of the instruction, the method of teaching being principally by rigid personal examinations ; the last year should be devoted to searching clinical instruction. In such a system, every student who presents himself would undergo a thorough examination into his intellectual, moral and educational qualifications, before he was allowed to enter the class. Every year he would be examined with reference to his fitness to advance to higher grades ; if unfitted, he would be compelled to review and wait until prepared. Every School, under this system, ought to be connected with a Hospital, in order to give proper

clinical instruction. If such a plan of Medical instruction as this were practically enforced, would not the character of our Profession be improved? Who can doubt it! And why should it not be inaugurated by some of our Schools? Let me commend these hints to the Medical Colleges. The system of instruction here outlined, has been, to some extent, for years followed at the University of Virginia at Charlottesville, and as a medical examiner in the army, many years since, I was struck with the uniform thoroughness of preparation of the students who graduated from that institution.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

- I. *Heat Considered as a Mode of Motion. Being a Course of Lectures, delivered at the Royal Institution of Great Britain.* By JOHN TYNDALL, F. R. S., &c., Professor of Natural Philosophy in the Royal Institution. London. 1863.

This is undoubtedly a volume of great interest and value, alike on account of the zealous energy, extensive information, and illustrative skill, with which the author develops his theme, and because of the intimate relations of this great subject with, perhaps, every other branch of natural science, and, indeed, with every department of practical life.

Many of the commonest facts under daily observation exhibit the significant connection between the phenomena of heat and those of life, vegetable and animal. The dullest mind must be more or less impressed with the transition of nature from the cheerless aspect of Winter to the fresh beauties of Spring—when everything that lives seems endowed with new powers of action and enjoyment—and with the reverse change, from the full product of energy in Summer and Autumn, to the return of dreariness and decay in Winter. The vast difference between the characteristics of tropical regions and those of polar zones, is familiar to every child, as is the striking contrast between the grand phenomena of lightning-flash and rolling thunder from Summer clouds, and the scarcely less imposing spectacle, at the opposite season, of congealed rivers, forests clothed in glittering ice, and all the hills and plains enveloped in the beautiful mantle of snow.

Even more common are the instances in which the subtle, yet mighty agent, heat, makes itself obvious, as an all-pervading force, bearing upon the well-being of mankind, and essentially connected with health, comfort, civilization, intellectual culture, and even rational existence. It is the one indispensable requisite for the wholesome preparation of food throughout the earth—for the extrication of metals, and the fashioning of those implements which alone make man master of land and sea. Without its magic influence towards the manufacture of instruments, and the processes of pharmacy, medical science and surgical skill were as impossible, as would be a system of agriculture, without hoe or plow—navigation without ship, chart, or compass—and valuable attainment of any kind, without means of readily satisfying natural necessities. Whatever physical and moral relations are sustained by clothing—whatever benefits are implied in the comforts of home—whatsoever results, essential to the life of society, belong to industrial pursuits and their rewards—what advantage soever, whatever dignity, elevation, solace and enjoyment come to human creatures from letters and books, from learning, science, and art—if there be wonders in the Heavens brought to sight by the telescope, and in the tiniest organisms of the earth revealed by the microscope—if there be help and joy in assisting glass to the vision of the near-sighted, and to the failing eye of age: they are all, as are all other conditions of earthly existence, inseparably dependent upon the influence of this wonderful agent, heat.

That such an agent should always have engaged the attention of thoughtful men was unavoidable. It was impossible for primitive generations long to witness the relations of fire, without in some sort examining them and turning them to account. And accordingly we read (Genesis, iv., 22) of some attainments made in working metals, even in the infancy of the human race. It is a fact too, not without significance in this connection, that the home name of Egypt, "*Chemí*," whether on account of extraordinary skill in metallurgic, and other like operations, in that early home of civilization, or for some kindred reason, has been stamped on the subtlest of physical sciences—chemistry.

Still, it is remarkable, that not until a date very recent, comparatively, has anything like an effective scientific method of inquiry been applied to the ascertainment of the laws, nature, and ultimate efficiency of heat. In common, however, with its associated elements, gravitation, light, sound, electricity, magnetism and chemical action, this subtle agent has now for some generations engaged the attention of ablest investigators, and in proportion as one, and another, and another inquirer has detected some important law, and

hints have been gathered from discoveries in kindred departments, the development of truth on this intricate subject, has advanced with accelerated pace, until, within the last few years, results have been reached, as to the character of the agency involved in heat, and as to the relations of that agency to the vastest and subtlest processes of the material universe, which cannot be contemplated without amazement and admiration.

This volume of lectures, by Professor Tyndall, is one of the most recent, as it is beyond question, one of the most masterly expositions of this department of physical science. At once original and elementary, ingenious, yet rigid in its method of elucidation, copious and clear, comprehensive in its range, bold in its encounter with difficulties, strong in its announcement of absolute results; it is, on the whole, just, pleasing and satisfactory. In point of style, the lectures are admirable, transparently clear, plainly intelligible, and so instinct with the life of the gifted experimenter, that the reader almost sees and hears the lecturer, and witnesses, in very deed, his magic demonstrations.

On merely hearing or reading the title of the treatise, "Heat considered as a mode of motion," one is apt to get an erroneous idea of its purport—to infer that the author has in view, some new motive power, as others have recommended heated air, &c., to take the place of steam, in propelling machinery, through its thousand-fold applications. Greatly above this, is the significance of Prof. Tyndall's discussions. In common, indeed, with other men of genius, who have investigated the subject, during these last few years, he conclusively demonstrates the amazing working power of heat, but not by any means, in the mere sense of a machinist or practical engineer. He looks at the mighty agent, in its relations to the other great powers of nature, and is chiefly concerned to determine its own intrinsic character. He is satisfied, by abundant evidences, that the doctrine of a calorific fluid, held by the majority of modern physicists, and taught in elementary courses of chemistry and natural philosophy, is entirely untrue. As such, he believes that doctrine is calculated to mislead the mind, in its endeavours to grasp the real and the practical involved in the agency of heat. He, therefore, deems it important, satisfactorily to determine what the truth of the case actually is. And the conclusion to which he is conducted, by necessary inference, from manifold, ingenious, delicate, surprising and beautiful experiments, is, that all the phenomena of heat, are due to invisible minute and amazingly rapid motions among the atoms of material bodies, and in the imponderable ether which pervades all space. And it is this fundamental idea, concerning the ultimate nature of the agency

known as heat, its actual kind and character among the phenomena of the world, which is intended to be expressed by the title of his volume, "Heat considered as a mode of motion."

The aim and scope of the book are well stated in the following paragraphs of the preface: "In the following lectures, I have endeavored to bring the rudiments of a new philosophy within the reach of a person of ordinary intelligence and culture. The first seven lectures of the course deal with *thermometric heat*, its generation and consumption in mechanical processes; the determination of the mechanical equivalent of heat; the conception of heat as molecular motion; the application of this conception to the solid, liquid and gaseous forms of matter; to expansion and combustion; to specific and latent heat, and to calorific conduction."

"The remaining five lectures treat of *radiant heat*; the interstellar medium, and the propagation of motion through this medium; the relations of heat to ordinary matter, in its several states of aggregation; terrestrial, lunar and solar radiation; the constitution of the Sun; the possible sources of his energy; the relation of this energy to terrestrial forces, and to vegetable and animal life."

"My aim has been to rise to the level of these questions, from a basis so elementary, that a person possessing any imaginative faculty and power of concentration, might accompany me."

The "*Thermo-Electric Pile*" of Leebeck, Nobili and Melloni, is the instrument used by Professor Tyndall, with astonishing skill, in exploring the secrets of his mysterious agent. That instrument (constructed of alternate bars of bismuth and antimony, because of the ascertained fact, that bars of any two metals, but especially of these two, soldered at one end, and then heated, however slightly, give out a current of electricity,) is, in the first lecture and its appendix, graphically described and clearly explained; in connection with its necessarily concomitant *galvanometer*, or delicately suspended and protected magnetic needle, to exhibit the electrical currents developed in the thermo-electric pile, by heat of any degree, and from whatever source.

This instrument, almost infinitely more delicate than any form of thermometer, in detecting and exhibiting special actions of heat, is in these lectures proved to be what Melloni had already shown it might become, one of the most important articles of apparatus, not only for all laboratories, but for common use, in the hands of the intelligently curious. In fact, if mechanical ingenuity can contrive a form of galvanometer sufficiently portable, for convenient service to physicians, in their daily practice, we see not why this little thermo-electric pile may not be made extensively useful, as an incredibly nice detector of grades, alternations, &c., of fever.

The simple fact that friction and percussion always generate heat, has long been known, in truth, few things are more universally familiar. And this fact, of itself, seems almost sufficient to satisfy a fairly considerate mind, that the phenomena of heat must be due to a transference of visible motion in masses, into invisible motion, among the atoms of those masses. In this view, it is readily intelligible, how friction can continue to generate heat of greater and greater intensity, the longer and the more vigorously it is applied, even without limit; but that the calorific fluid, as physicists have imagined, should be capable of affording such exhaustless supply from some very limited reservoir, appears scarcely credible. Considerations of this kind have, for a long while, determined the convictions of certain leading minds. Lord Bacon thus expresses the doctrine, (*Novum organum*, Bk. ii. aph. 20): "When I say of motion, that it is the genus of which heat is a species, I would be understood to mean, not that heat generates motion, or that motion generates heat, (though both are true in certain cases,) but that heat itself, its essence and quiddity, is motion, and nothing else. * * * The form or true definition of heat, (heat that is in relation to the universe, not simply in relation to man,) is in a few words, as follows: *Heat is a motion, expansive, restrained, and acting in its strife upon the smaller particles of bodies.*" Somewhat similarly, Count Rumford, impressed by the prodigious amount of heat generated in the processes of boring cannon, under his supervision in the work-shops of the military arsenal at Munich, thus recorded his conclusions, more than two-thirds of a century ago: "The source of heat generated by friction in these experiments, appeared evidently to be *inexhaustible*. Anything which any *insulated* body or system of bodies continue to furnish, *without limitation*, cannot possibly be a *material substance*; and it appears to me to be extremely difficult, if not quite impossible, to form any distinct idea of anything capable of being excited and communicated in these experiments, except it be *MOTION*." Precisely to the same effect, Sir Humphrey Davy expresses his judgment, as founded upon previous experiments confirmed by satisfactory observations of his own, (*Chemical Philosophy*, p. 94.): "As would appear from Count Rumford's experiments, the immediate cause of the phenomenon of heat is motion, and the laws of its communication are precisely the same as the laws of the communication of motion." And again, (*Memoir on heat, &c.*, Works, vol. ii.): "It has been experimentally demonstrated that caloric, or the matter of heat, does not exist. A motion or vibration of the corpuscles of bodies, must be necessarily generated by friction and percussion. Therefore, we may reasonably conclude that this motion, or vibration, is

heat, or the repulsive power. Heat, then, or that power which prevents the actual contact of the corpuscles of bodies, and which is the cause of our peculiar sensations of heat and cold, may be defined a peculiar motion, probably a vibration of the corpuscles of bodies, tending to separate them. It may, with propriety, be called the repulsive motion."

It is singular that, in spite of such authorities, and the reasons adduced by them, the idea of a subtle, material fluid, as the cause of heat, should, even to the present day, have maintained its hold upon the mind of cultivated men. The convenience of that idea in explaining, to a certain extent, a limited class of ordinary phenomena, and the fact of its incorporation in college manuals and other text books, have no doubt contributed to give it such currency. Like other errors, however, long cherished through the prevalence of half-knowledge, it seems now destined to give way before the more thorough development of truth. A new philosophy, as intimated by Professor Tyndall, in the extract adduced from his preface, is now brought to bear upon the questions, connected with these subtle agencies of nature; and it seems so well established, as an efficient intellectual leverage, and is so industriously applied by able investigators, as already to have developed results of the most astonishing character, while it promises even more wonderful disclosures in the future.

This new philosophy is, in its primary method, nearly akin to the fluxional and differential processes of Newton and Leibnitz in analytical mathematics. It deals with infinitesimal elements, regards force and motion in their ultimate and nascent conditions, and from an analysis corresponding to the subtle minuteness of material atoms and their movements, and to the still more subtle possibilities of thought, it advances to the solution of the great problems which, on every hand, natural phenomena still present for intelligent determination.

As applied to the subject of heat, and instructively exhibited by Professor Tyndall in the volume under review, this new philosophy has, by other men of genius, been recently rendered surprisingly fruitful. By independent methods, Dr. J. R. Mayer, of Herlebroun, Germany, and Mr. J. P. Joule, of Manchester, England, have satisfactorily determined that the heat required to add 1° of Fahrenheit to the temperature of one pound of water, is precisely what would be generated by the arrest of motion, in one pound of matter which had fallen to the earth, from a height of 772 feet, and that the same amount of heat, mechanically applied, would just suffice to lift the one pound weight back to the height of 772 feet, or to raise 772 pounds one foot high. This force, therefore, sufficient to lift

772 pounds though one foot, is received as the *thermo-dynamic unit*, or the *mechanical equivalent* of heat.

The consequences of thus establishing a mutual convertibility, between heat and motive power, must necessarily prove important beyond computation. Many such consequences have already been traced, by the able men before mentioned, and by Professors W. Thomsen, Waterston, Rankine, Regnault, and others. In cases of the development of heat by compression of gases, by chemical union, and by transmission of the electric current along insufficient conductors, an equivalency has been gradually made out, between the disappearing and the new appearing forces, and such instances continually extend and multiply. For example, heat is found to appear when light is extinguished in bodies. In fact, almost all other forms of force may directly originate motion, and the latter may be made to evolve many of them in return. This relation, expressed by Grove, a score of years since, as the "correlation of forces," Hemholtz has named the "conservation," and Smee the "monogenesis of force." One of the recent applications of this general doctrine is extremely curious, and peculiarly entitled to notice in a Medical Journal—time is found to be an essential element in all phenomena involving force and motion, not less in sensation, perception, volition, and muscular action, than in purely physical actions. Thus, the average speed of the nervous change, conveying human sensations and volitions, is by Helmholtz stated at 180 feet per second; slower in some lower animals; faster in some of the temperaments, among men. Here is a physical fact connected with quick and slow thinking, and bearing, as upon the conditions of nice astronomical observations, so upon many other of the more delicate processes of human skill.

Questions growing out of such ascertained correlations and convertibility of force, are, of course, well nigh as numerous as the phenomena of the universe. But there is one inquiry which seems to underlie all others—viz: What is the single form of energy, ordained by creative intelligence to be, beyond all others, the source and fountain of all other kinds of force? Whether an answer even probably and approximately correct, may ever be given, future investigators will, perhaps, determine.

Satisfactorily to present to the reader the character and merits of these lectures of Professor Tyndall, as they unfold the new philosophy, in its relations to his important theme, would require very much more space than our limits admit. We can, therefore, only select as specimens of his genius, power and style, one or two of the striking and beautiful discussions, with which the series abounds. (Lect. iv. pp. 106-8.): "I have a square pillar of ice.

an inch and a half in height, and about a square inch, in cross-section. To many persons here present, this block of ice may seem of no more interest and beauty than a block of glass; but in the estimation of science, it bears the same relation to glass, that an oratorio of Handel does to the cries of the market-place. The ice is music, the glass is noise; the ice is order, the glass is confusion. In the glass, molecular forces constitute an inextricably entangled skein; in the ice, they are woven to a symmetric web, the miraculous texture of which, I will now try to reveal."

"How shall I dissect this ice? In the solar beam—or, failing that, in the beam of an electric lamp, we have an anatomist competent to perform this work. I will send the rays direct from the lamp through this slab of pellucid ice. It shall pull the crystal edifice to pieces by accurately reversing the order of its architecture. Silently and symmetrically the crystallizing force builds the atoms up, silently and symmetrically the electric beam will take them down. I place this slab of ice in front of the lamp, the light of which now passes through the ice. Compare the beam before it enters, with the beam after its passage through the substance; to the eye there is no sensible difference; the light is scarcely diminished. Not so with the heat. As a thermic agent, the beam, before entering, is far more powerful than it is after its emergence. A portion of the beam has been arrested in the ice, and that portion is our working anatomist. Well, what is he doing? I place a lens in front of the ice, and cast a magnified image of the slab upon the screen. Observe that image, (fig. 33; the reader must endeavour to conceive this,) which, in beauty, falls far short of the actual stars, each one possessing six rays, each one resembling a beautiful flower of six petals. And as I shift my lens to and fro, I bring new stars into view, and as the action continues, the edges of the petals become serrated, and spread themselves out like fern leaves upon the screen. Probably few here present are aware of the beauty latent in a block of common ice. And only think of lavish Nature operating thus throughout the world! Every atom of the solid ice which sheets the frozen lakes of the North, has been fixed according to this law. Nature 'lays her beams in music,' and it is the function of science to purify our organs, so as to enable us to hear her divine strains."

Again, pp. 149–50, Lect. v.: "Let us fix our attention upon this wonderful substance, water, and trace it through the various stages of its existence. One pound of hydrogen, in combining with eight pounds of oxygen to form water, will raise 34,000 pounds of water, 1° centigrade, or .55 of 1° Fahrenheit. First, then, we have the constituents of water as free atoms, which attract each

other, fall, and clash together. The mechanical value of this atomic act is easily determined; knowing the number of foot-pounds (the thermo-dynamic unit before mentioned) corresponding to the heating of 1 pound of water 1° Fahrenheit, we can readily calculate the number of foot-pounds equivalent to the heating of 34,000 pounds of water 1° Centigrade. Multiplying the latter number by 1,390, (772 being the mechanical equivalent for 1° Fahrenheit, 1,890 is the equivalent for 1° Centigrade,) we find that the concussion of our one pound of hydrogen with eight pounds of oxygen is equal, in mechanical value, to the raising of 47,000,000 pounds one foot high! I think I did not overrate matters, when I said that the force of gravity, as exerted near the earth, was almost a vanishing quantity, in comparison with these molecular forces. And bear in mind the distances which separate the atoms before combination—distances so small as to be utterly immeasurable. Still, it is in passing over these distances that the atoms acquire a velocity sufficient to cause them to clash, with the tremendous energy indicated by the above numbers."

"After combination, the substance is in a state of vapour, which sinks to 212° , and afterwards condenses to water. In the first instance, the atoms fell together to form the compound. In the next instance, the molecules of the compound fell together to form a liquid. The mechanical value of this act is also easily calculated: 9 lbs. of steam in falling to water, generate an amount of heat sufficient to raise $967 \times 9 = 8,703$ lbs. of water 1° F. Multiplying this number by 772, we have a product of 6,718,716 foot-pounds, as the mechanical value of the mere act of condensation. The next great fall of our 9 lbs. of water is from the state of liquid to that of ice, and the mechanical value of this act is equal to 993,564 foot-pounds. Thus our 9 lbs. of water, in its origin and progress, falls down three great precipices: the first fall is equivalent to the descent of a ton weight, urged by gravity down a precipice 22,320 feet high; the second fall is equal to that of a ton down a precipice 2,900 feet high; and the third is equal to the descent of a ton down a precipice 433 feet high. I have seen the wild stone-avalanches of the Alps, which smoke and thunder down the declivities, with a vehemence almost sufficient to stun the observer. I have also seen snow-flakes descending so softly, as not to hurt the fragile spangles, of which they were composed. Yet, to produce, from aqueous vapour, a quantity of that tender material, which a child could carry, demands an exertion of energy competent to gather up the shattered blocks of the largest stone-avalanche I have ever seen, and pitch them to twice the height from which they fell."

[CONCLUDED IN MAY NUMBER.]

MISCELLANEOUS.

PHYSICIANS AND PHYSICISTS.—When that dread day arrives on which, as we have been told, we are to be summoned to the bar of public opinion to state what facts we know, what principles we have established, and how far we have brought to the aid of our investigations, the resources of our physical science, the answer may probably be more full and complete than the utterer of that dreadful threat supposed. There are few things more interesting in the recent history of Medicine than the remarkable ingenuity with which physical means of research have been brought to bear upon the hidden secrets of the body in health and disease. What the ophthalmoscope has done for the eye, and the laryngoscope for the larynx, the stethoscope and percusser have done for the hidden organs of the chest. The thermometer, in the hands of Wunderlich, Aitken, and Ringer, is beginning to tell us its own story, in the diagnosis and prognosis of disease; so that, for example, in the treatment of fever the thermometer will at the fourth day establish an almost absolute diagnosis between typhus and typhoid fever. And a further instrument of precision, of remarkable beauty and wide range of usefulness, was, on Wednesday evening last, brought prominently under the notice of English Physicians, by Dr. Anstie, at the Medical Society of London. The sphygmograph of M. Marey is an exquisitely designed instrument, by the aid of which the pulse is armed with a pen, and at every beat writes its own diagram, and registers its own characters. In this diagram, each part of every revolution, or "beat" of the heart, is recorded, so that the relation of the systole and diastole is described in every curve, and the state of arterial tonicities on the one hand, and the impulsive power of the heart on the other, are automatically compared. The finger is substituted by an instrument of precision, which replaces impressions, by recorded facts self-analyzed. Dr. Anstie and Dr. Sanderson have, for some time, been pursuing a series of clinical and physiological observations by this instrument, and on this occasion, Dr. Anstie discussed, by the aid of pulse-charts, drawn to a large scale from the automatic register, some of the results of a clinical investigation by the aid of Marey's sphygmograph in the history of typhus and typhoid fever, and of the ephemeral fevers which occasionally simulate them. He seems to conclude that in both typhus and typhoid fever, it appears to be the universal rule, that the pulse is affected in a way which indicates great reduction of the arterial

tonicity. This indication is given, on the application of the sphygmograph, by pulse-curves, which present a nearly vertical line of ascent, an acute summit, a sudden descent, and a very marked dirotism, or double-beat. The pulse, thus strongly marked, continues, at all hours of the day, during the whole disease, up to the period of true convalescence. The prognosis seems to be always favorable, as soon as the pulse has returned to that normal type, which indicates the restoration of arterial tonicity, even though, for some time, it remain rapid. On the contrary, there appears to be always danger, so long as the peculiar pulse remains. If, for instance, after the end of the third week in typhoid, or the second week in typhus, there is not a considerable alteration of the pulse-form, in the direction of the normal type, dangerous sequelæ may be feared.

In contrast with the peculiar type of pulse, which, even from an early stage, distinguishes typhoid and typhus, the pulse in the fevers, which we style "febricula," is not materially altered from the normal type, except as regards rapidity, even when much heat of the skin, and other decidedly febrile symptoms, are present.

It is believed by Marey, and Dr. Anstie's experience so far, seems to confirm it, that while typhus and typhoid fever (and also contagious erysipelas, purulent infection, low pneumonia, acute rheumatism, and delirium tremens,) present the pulse of low arterial tonicity, the so-called true exanthemata—scarlatina, measles, small-pox, &c., show no such affection, at any rate in their early stage. This, if true, establishes a very important point in diagnosis, besides indirectly affording excellent suggestions for the logical investigation of fevers.

These "points" are not stated in a dogmatic manner by Dr. Anstie. They are results which appear fairly to issue from an extensive investigation (more especially of typhoid fever). But it is certain that the coöperation of a large number of careful and pains-taking observers, is necessary, in order that the history of the pulse-formed may be traced as completely as, for instance, Wunderlich has traced the history of temperature changes in various fevers, which was only affected after 700 complete observations, carefully conducted. At present, besides himself and Dr. Sanderson, to whom, indeed, the idea of the investigation was due, Dr. Anstie knew of none who has taken the matter up in this country. He determined, therefore, without loss of time, to direct the attention of English physicians to the immense field of fruitful observation which lies open to the investigation of observers, who are willing to devote time and patience to the development of M. Marey's brilliant invention.—*Lancet*.

GAS AND WATER PIPES.—No one with a nose can be unconscious of the extensive contamination of the soil of all large cities by the leakage from gas-pipes, and the blackened condition of the earth, excavated from the street, appeals to the eye, even when the smell of gas is wanting. We have had numerous instances recorded, where the gas has invaded the water supplied to cisterns, and in some cases its accumulation has led to explosions, only slightly more dangerous to human life, than the slow poisoning constantly going on. The great outbreak of cholera in Broad street, in 1854, was distinctly traced, by the late Dr. Snow, to the poisoning of the pump in that neighborhood; and though that outbreak was laid rather to sewerage than gas-poisoning, it is not impossible that gas may form an unrecognised element of danger.

Amongst his many other duties, Dr. Letheby, the Medical Officer of Health, for the city of London, makes periodical reports as to the illuminating power of the gas supplied by the different companies; but if he could draw up an approximative account of the gas wasted in poisoning the streets, he would probably startle the public, and would help to explain to the shareholders of the companies where the profits of gas-making go to. In some of the new streets—Garrick street for example—subways have been constructed for the passage of gas and water pipes: and here the gas companies are not permitted, any more than the water companies, to put up faulty pipes or leaky joints. Then why, we ask, should they be permitted to do so in the ordinary thoroughfares?

Thanks to a recent opportunity of inspecting the manufacture of iron pipes, on a large scale, we are in a position to explain the anomaly. The water companies are, as a rule, willing to pay a good price for a good article, and insist upon a rigid system of testing each pipe by hydraulic power before it is received from the manufacturer. Iron, like everything else, is of different qualities, and and it is possible to make cheap and dear pipes; but the cheap will not, as a rule, stand the required pressure, but give out capillary streams of water, which would astonish those who imagine every plate of metal to be impervious to fluids. The gas companies, on the other hand, rarely ask for any test to be applied, and, as a rule, look to cheapness rather than efficiency; and it is not surprising, therefore, that the gas permeates the too porous metal. After a time, too, iron of an inferior quality becomes chemically acted upon by the gas, and converted in part into a sulphuret, which is brittle as well as porous, so that the least sinking of the earth, in which the pipe is laid, leads to a fracture. The rapidity with which this deteriorating process in the metal takes place is, of course, in direct proportion to the impurity of the gas.

Another great source of gas-leakage, is the form of joint employed. The majority of gas companies (we believe all the London ones) employ the common "lead joint," the pipes being loosely inserted, one into the other, and the space filled up with molten lead; but a much more efficient joint is formed when the end of one pipe is made slightly conical, and accurately turned so as to fit exactly into the bored socket of the other; and some gas engineers have combined the two methods with advantage. The expense of the two forms of joint appears to be nearly identical, for the cost of turning and boring is more than counterbalanced by the price of the lead; but turned and bored pipes are of a better quality and dearer, and hence the reluctance of gas companies to employ them. In some of our leading cities, however, gas engineers and companies are overcoming their prejudices, and we may instance Manchester and Liverpool as examples.

One great cause of imperfection in the joints of gas-pipes, is the gradual sinking of the earth on which the pipes are laid, so that an undue strain is put upon the joints, by which the lead becomes loosened and displaced. Until all gas-pipes are laid in subways, there must be a certain liability to this; but if more care were taken in preparing the foundation for the pipes—as, for instance, by laying them upon concrete—much of the present unwholesome leakage might be obviated. As our drainage pipes are now secure for a few years at least, this would be a good time to insist upon a general overhaul of the gas-pipes, which then lie undisturbed.

[*Lancet*.

A NEW "INHALER" FOR SULPHURIC ETHER.—In this instrument the ether is applied on a cone of flannel fitted upon a frame of light wire, and so adjusted as to be kept supplied with ether as occasion may require, without the necessity of removing it from the patient's face during the inhalation. Tieman & Co., of New York, are the manufacturers of the instrument. Testimony as to its advantages will soon be given.

ENDERMIC POISONING BY BELLADONNA.—The application of belladonna to the breasts for the relief of painful distension of the organs, especially after sudden weaning, is often resorted to, and with advantage. Where there is an abrasion of the skin, however, this practice, it should be known, is not devoid of danger. A case of poisoning, under such circumstances, is recorded in a recent number of the *Lancet*, November 11, 1865.—*Journal of Medicine*.

NEW ORLEANS, *February, 1866.*

Gentlemen—Presuming that it might be considered of some interest, I have taken the liberty of reporting the following abnormal division of the carotid arteries. The division of the common carotid occurred opposite the lower, instead of the upper portion of the thyroid cartilage as is usual. The external carotid being scarcely over a quarter of an inch in length, becoming at that distance an axis compound of the following branches, counting from the mesial line of the neck: lingual, facial, occipital, superior thyroid, and the common trunk of the temporal and internal maxillary—the posterior auricular, in this case, being a branch of the occipital, and the ascending pharyngeal being absent.

With respect, your ob't serv't,

W. S. M., Demonstrator of Anatomy,

N. O. School of Medicine.

P. S. I enclose you a tabular report of the results of operations performed in Rhodes' Div., late C. S. A., commencing at the battle of Chancellorsville and including the battle of Gettysburg. I do not suppose that in itself it will prove of any interest, but together with other reports of a similar character, to which, I presume, you have access, it may aid in placing before the Medical Profession generally the results, at least in a partial degree, attained during the recent war.

W. S. M.

<i>Site of Operation.</i>	<i>No.</i>	<i>Died.</i>	<i>Recovered.</i>
Arm, upper third.....	14	3	11
“ middle “	7	2	5
“ lower “	10		10
Fore-arm, middle third.....	2		2
“ lower “	1		1
Shoulder joint.....	12	2	10
Thigh, upper third.....	3	3	
“ middle “	13	7	6
“ lower “	15	5	10
Leg, upper “	27	10	17
Leg, lower “	18	3	15
Resec. Head Humerus.....	6	5	1
“ of portions Radius.....	2		2
“ “ Ulna.....	1		1
Amp. at Ankle-joint.....	1		1
“ Chopart.....	1	1	
Resec. Elbow-joint.....	1		1
All primary.			

NEW TEST FOR ARSENIC.—The wonderful delicacy of the previous tests for the arsenic which have been thought to be almost perfect, are surpassed by the electrical test. By means of a simple apparatus all the arsenic in a substance may be rapidly extracted. Place a solution of arsenic matter in a platinum vessel, plunge a zinc wire into the liquid, and the arsenic will appear on the platinum; by prolonging the action, the whole of the arsenic may be extracted from the compound. This process is superior in sensibility, and as it requires far less manipulation of the suspected substance, is much more trustworthy for toxicological examinations than the methods now in use.—*Canada Medical Journal*.

HEROIC DOSES OF ACETATE OF LEAD IN UTERINE HÆMORRHAGE.—At a recent meeting of the Medical Society of Southwestern New York, the proceedings of which are recorded in the *Buffalo Medical and Surgical Journal*, Dr. C. K. Irwin, of Dunkirk, read a paper on "Acetate of Lead in Uterine Hæmorrhage in Heroic Doses." He recommends its use in doses of one, two, or three drachms, which, he states, are as free from danger as if given in doses of so many grains, and with the effect of controlling the hæmorrhage, completely, in an instant. Dr. Irwin, in his practice, has always used the acetate of lead in these large doses, without having lost a patient from hæmorrhage of the uterus. It is not necessary to confine its use to cases of full period, or where the placenta has been delivered, as its action will be to cause immediate expulsion of the contents of the uterus, and it can be used in cases of violent hæmorrhage from polypus, hydatids, abortions, retention of placenta, or almost any case requiring prompt and heroic action for the suppression of uterine hæmorrhage, except in cases of placenta previa.

ANTAGONISM OF MORPHIA AND ATROPIA.—The antagonistic action of morphia and atropia is a subject of the highest physiological interest. The inquiries of Drs. Kean, Moorhouse, and Mitchell have shown, (a) that these drugs do not counteract one another as regards their effects on the circulation; (b) that as regards the eye, they are mutually antagonistic, but the action of atropia is the more permanent; (c) that the cerebral symptoms, produced by either drug, are capable in a great measure of being overcome by the other, but there is some difficulty in establishing the proper balance; (d) that atropia does not diminish the nausea produced by morphia; (e) that the two medicines are antidotal, as regards their effects on the brain, but they have exactly the same effect on the bladder.—*Lancet*.

OF THE TREATMENT OF CROUP BY THE INHALATION OF LIME WATER.—M. Kuchenmeister, of Dresden, has stated that diphtheritic membranes are rapidly dissolved in lime-water; and this statement has been confirmed by M. Biermer, the Professor of Clinical Medicine in the University of Berne, who has repeated the experiment before the students of his class.

The *Brit. For. Med. Chir. Review*, says that some pseudo-membranous exudations, of considerable extent and thickness, were placed in a small glass of lime-water, and in the space of from ten to fifteen minutes, and before the eyes of the students, they disappeared, leaving only a very slight sediment at the bottom of the glass. M. Biermer was, therefore, induced to apply the lime-water, locally, in a living patient, and he has published the results, which were quite satisfactory. The patient was a girl, aged seventeen, admitted into the hospital of Berne for croup, which has lasted four days. When she was admitted, she was nearly choked, cyanotic, and insensible, and she threw up portions of membrane, only by means of the administration of some very strong irritant medicines. The symptoms of laryngeal constriction still continued, together with distressing dyspnoea; and pulverized water was employed to moisten the respiratory passages. The water employed, which was at first hot, and then boiling, produced considerable amelioration; and M. Biermer, having previously tried the experiment mentioned above, with the false membrane and lime-water, supplied the pulverizer with lime-water. The improvement was evident, as soon as the inhalations were commenced; the expectoration changed its character, and became purulent; the cough gradually disappeared, and the fever abated; and only hoarseness and a slight cough remained during the convalescence, which terminated in a complete cure. M. Biermer, and all those who watched the progress of the case, were convinced that the inhalations had a solvent effect upon the false membranes; but the Professor does not recommend an exclusive adoption of this local treatment, which softens and detaches the exudations, but does not reach the cause of the disease, which must be combatted by constitutional remedies, calomel being considered the chief. The plan of M. Biermer has been followed by other practitioners; and M. Kuchenmeister has published a case of diphtheritic pharyngo-laryngitis in a child of three years and a half old, treated in the same manner with complete success. Dr. Brauser, of Ratisbon, has also lately published a case of croup in a child of four years and a half old, treated in the same manner, and perfectly cured. M. Biermer insists particularly on the necessity of using the injections hot.

[*Buffalo Medical and Surg. Journal.*

FOREIGN INTELLIGENCE.—M. De Wouves has demonstrated, that albumen is present in the urine of all cholera patients, some days before the more serious symptoms exhibit themselves. He does not attribute this fact to any disease of the kidneys, but he regards it as an important means of distinguishing between true cholera and diarrhoea.—*Boston Medical and Surgical Journal*.

COPAIBA DEPRIVED OF ITS DISAGREEABLE SMELL.—Copaiba and pitch, of each one ounce; magnesia, a sufficient quantity to make a mass. According to the greater or less amount of magnesia, the mass will be more or less consistent. If the latter, a teaspoonful may be given two or three times a day; if the former, pills may be made. M. Beyran, of Paris, has found this preparation not only effectual, but to present none of the usual and very offensive odour of the copaiba.—*London Lancet*.

GALACTOZYME.—Galactozyme, or galozyne, is the result of the fermentation of milk by means of yeast, and is used, as stated by Dr. Schnæpf, in the *Gazette Hebdomadaire*, by the inhabitants of the Steppes of Russia, as a sovereign remedy in phthisis. Cases are mentioned in Dr. Schnæpf's article, where the patients gained considerably in weight, by taking half a tumblerful night and morning; but the doses must be regulated by the peculiarities of the patient. Nor is it indifferent whether the fermentation is carried to a greater or less extent.—*Chicago Medical Examiner*.

THE MEDICAL SCHOOLS OF PHILADELPHIA.—The University, at its recent annual commencement, had 520 matriculants, and 160 graduates; and the Jefferson Medical College 425 matriculants, and 165 graduates.—*Medical and Surgical Reporter*.

ANOTHER USE FOR KEROSENE.—This article is getting to be applied to almost as many purposes as whiskey. It is the most popular remedy for rheumatic joints, often replacing the original disorder by a severe cutaneous inflammation of its own. An Atlantic paper proclaims it as a protection of horses and other animals from flies. A mixture of kerosene with lard oil, in the proportion of one part to two of the latter, is to be rubbed on the animals' legs once or twice a day.—*Pacific Med. and Surg. Journal*.

DR. MOTT'S WILL.—The entire value of the estate of Dr. Valentine Mott is stated to be about \$400,000. His anatomical museum goes by his will to the New York Medical College.

[*Pacific Medical and Surg. Journal*.

MARVELLOUS COLOURING PROPERTIES OF ANILINE.—Our readers are aware that this extraordinary substance, originally obtained by the destructive distillation of indigo, is now manufactured for commercial purposes, from coal tar. Its properties and uses as a colouring matter, exceed those of any other substance in nature. It is a nitrogenized base, nearly colourless, but capable of combining with acids, and forming a variety of the most beautiful salts. By the action of iodine, or nitrate of silver, or of mercury, or chloride of mercury, a magnificent crimson is obtained, so concentrated that one grain in a million times its weight of water, gives a pure red; in ten millions a rose pink; in twenty millions a decided blush, and even in fifty millions, or one thousand gallons, with a white screen behind the vessel in which it is dissolved, an evident glow of colour. Every colour of the rainbow can be produced from the aniline base by chemical reagents. A London chemist, Mr. Field, in a lecture on the subject, exhibited a highly interesting experiment illustrating this fact. He painted on a white board the seven letters of this word, in the colorless bases properly prepared, and sprinkled the board with acetic acid and spirit. The A became violet, the N indigo, the I blue, the L green, the I yellow, the N orange, and the E red.—*Pacific Med. and Surg. Journal.*

INTERNAL USE OF CHLOROFORM IN CONVULSIONS.—The *American Medical Journal*, for October, contains an interesting paper, by Dr. A. P. Merrill, of New York, on the internal use of chloroform, in convulsions dependent on cerebral congestion. He gives it in large doses, often one, and even two drachms at a dose. When thus administered, he ascribes to it a decided power over every kind of convulsive movement, and certain relief to every form of congestion. It is much less irritating to the mucous lining of the mouth and throat than to the skin. "Sometimes a single drop, falling into the folds of the neck, will cause vesication, while a fluid drachm passing into the stomach, gives only a slight inconvenience by its stimulation of the mouth and throat." In a case of convulsions occurring in a little girl, and which had continued two hours, the child being pulseless and apparently at the point of death, he "poured full half a drachm within her lips, which were elevated to receive it. It found its way slowly through the teeth, and was, with a convulsive effort, swallowed without any loss. In one minute all the convulsive movements were lessened, as remarked by the attendants. Still, there remained considerable spasmodic action, and the eyes were unaffected, being wide open, with dilated pupils. The dose of chloroform was repeated in a few minutes, and almost

instantly her eyes were closed, and no spasm remained." Other cases are reported of like character. The remedy was equally efficacious in congestive chill, and it was used with success in two cases of poisoning by strychnia. We confess to some degree of surprise at this heroic mode of administering chloroform. We have always been cautious to dilute it liberally with mucilage. But the statements of Dr. Merrill certainly entitle his method to a full trial at the hands of others. Though the convulsions of children are rarely fatal, yet we do occasionally meet with an attack which resists all treatment, and holds on tenaciously till death. If the large doses of chloroform can be applied in such cases with the declared results, we shall rejoice to have in our possession the means of achieving such a triumph.—*Pacific Medical and Surg. Journal.*

PERCHLORIDE OF IRON IN UTERINE HÆMORRHAGE.—The London *Lancet* extols this preparation in hæmorrhage after labour or abortion. The directions are to inject a solution of the salt into the uterus, after clearing out the cavity of placental remains and clots. The solution should be of the strength of one part of a saturated solution of the salt to eight of water. It not only arrests hæmorrhage by coagulating the blood in the mouths of the uterine veins, but it is a splendid antiseptic, and hence reduces the liability to puerperal fever.—*Ibid.*

AMMONIA AS A SUBSTITUTE FOR STEAM.—In Paris, they are now discussing a scheme for propelling carriages by ammoniacal gas, and a patent for an ammonia engine has been taken out in the United States. The gas is condensed by cold, and the liquid ammonia thus prepared, is put in a reservoir connected by a pipe and stop-cock, with a working cylinder. At the ordinary temperature of the atmosphere the liquid expands into gas with great force, and when the cock is opened the gas rushes into the cylinder and works the piston in the same manner as steam. It is then condensed by water, for which it has a strong affinity. The quantity of liquid ammonia used in an hour as an equivalent to the power of one horse, does not exceed three gallons, weighing twenty-two pounds. The water used to absorb it is saved, and the ammonia recovered and used over again. It has long been a favorite purpose of inventors to compress air, so as to store up power in a form capable of easy transportation. This problem is solved by the application of liquid ammonia. Great things are expected from this invention.—*Ibid.*

MEDICAL NEWS.

HORSE-FLESH AS FOOD.—Markets for the sale of horse-flesh have been officially established at Paris, Vienna, Stockholm, and Copenhagen.—*N. Y. Med. Record.*

OFFICERS OF N. Y. OBSTETRICAL SOCIETY.—The following gentlemen have been elected to serve for the ensuing year: Dr. T. G. Thomas, President; Dr. Chas. Henschell, Vice President; Dr. J. G. Perry, Recording Secretary; Dr. Abraham Jacobi, Corresponding Secretary; and Dr. W. H. Bibbins, Treasurer.—*Ibid.*

THE LECTURESHIPS in the Medical Department of the University of Pennsylvania, recently endowed by Dr. Geo. B. Wood, of that city, have been filled by the appointment of the following gentlemen: Dr. J. J. Reese to that of Medical Jurisprudence, including Toxicology; Dr. Henry Hartshorne to that of Mineralogy and Geology; Dr. H. C. Wood to that of Botany; and Dr. Harrison Allen to that of Zoölogy and Comparative Anatomy.—*N. Y. Med. Journal.*

THE SMOKE NUISANCE.—A perusal from time to time of such speeches as Sir Robert Peel's and Mr. Hanbury's, will gradually convince all that the issue of clouds of smoke from factory chimneys, is not only a huge nuisance, but that it is a huge waste. Mr. Hansbury said that his firm in one year, had saved £2000 by adopting Juke's patent smoke consuming apparatus. Sir Robert Peel had been informed by an eminent chemist, that by the faulty combustion of coal, forty per cent. of heat was lost.—*Lancet.*

DECLINE OF CATTLE PLAGUE.—The cattle plague returns up to Saturday last report 7,310 only, as against 10,167 the previous week.—*Lancet.*

A SIMPLE FORM OF FILTER.—A very simple and perfect form of filter has been devised by the *appareteur* of the College of France, and deserves attention. It is made by placing in a tank, containing impure water, a vessel in such a position that a sponge which it contains laps over its edge, and dips into the water of the tank. The sponge gradually sucks up and purifies the water in the tank, and allows it to drop into the smaller vessel or receiver, from which it may be drawn on by a tube. By placing a few pieces of charcoal in the bottom of the receiver, filtration of the most perfect kind is effected.—*Ibid.*

DR. WM. A. HAMMOND, LATE SURGEON-GENERAL U. S. A.—It is stated in some of the daily papers, that Dr. Hammond “has gone to Europe, in charge of a grandson of the late John Jacob Astor; and a correspondent says that he receives for his services \$10,000 in gold for six months, all travelling and subsistence expenses liberally paid, and \$3000 for each month beyond the six.”

[*Cin. Lancet and Observer.*

THE NON-EXISTENCE OF FREE AMMONIA IN THE BLOOD.—The researches of Richardson, published some years since in his beautiful memoir on the Causes of Coagulation of the Blood, seemed to prove that free ammonia is always present in living blood, and that it is its evaporation which causes the solidification of the fibrin. Richardson's views, however, were last year controverted by Herr Kuhne, of Berlin, who, by the employment of an exceedingly delicate test—Nessler's reagent—found that free ammonia is not present in undecomposed blood. The subject has quite recently been taken up by Dr. Arthur Gamgee, of Edinburgh, who concludes, from several carefully conducted experiments, that Kuhne's statement is correct, and that the ammonia, which Dr. Richardson discovered, must have been the product of decomposition. Nessler's test is prepared by saturating a solution of iodide of potassium with iodide of mercury, and afterwards making the liquid strongly alkaline, by the addition of caustic potash. After standing for some time, a perfectly clear solution is obtained, which on the addition of ammonia gives a distinct reddish-brown precipitate.

[*Lancet.*

SURGICAL PROVISION AGAINST RAILWAY ACCIDENTS.—The Atlantic and Great Western Railway Company have organized a surgical department, and appointed Dr. J. T. Ray as Surgeon-in-chief. A surgical corps is to be organized along the entire line from Salamanca to Dayton.

HIPPOPHAGY IN BERLIN.—Great success has attended the introduction of horse-flesh in Berlin, as an article of human food. In 1865, 2241 horses were slaughtered for this purpose. The meat is perfectly wholesome, and tolerably palatable, resembling rather coarse beef.—*Lancet.*

THE DEATH of Professor Forchhammer, the eminent geologist and mineralogist, of Copenhagen, and the author of several works on chemistry, has been recently announced.

RESPIRATION AND SIGNS OF LIFE IN A FIVE MONTHS' FŒTUS.—Dr. J. W. Taylor reports, in the *Lancet*, the case of a living male foetus, prematurely delivered, about the fifth month of utero-gestation. It continued to breath freely, for at least an hour and a half, after which the respirations became much shorter and at longer intervals. It gradually succumbed, after surviving about two hours. It measured about seven inches in length.

DEATH OF PROFESSOR BRANDE, F. R. S.—The London *Lancet* of February 17th, announces the death of this well known chemist, at the age of eighty. His "Manual of Chemistry," "Outlines of Geology," and "Dictionary of Science and Art," have had an extended circulation even in this country.

DR. HALBERTSMA, the distinguished Professor of Anatomy and Physiology at the University of Leyden, and the author of many valuable contributions to human and comparative anatomy, and to human craniology, recently died at Coblenz.

Boston Med. and Surg. Journal.

HOMŒOPATHY has signally failed in the treatment of the rinderpest at Norfolk, England, where it was fairly tested.

THE WEIGHT ICE WILL BEAR.—Many persons are often deterred from skating, and when they do so, are deprived of much of its pleasure, by not knowing whether the ice is firm enough to bear them or not. We therefore give, for their benefit, the test of the Ordnance Department, as to the capacity of ice to bear heavy weights, which is to the effect, that ice two inches thick will bear infantry; four inches thick, cavalry with eight guns. At six inches it will bear heavy field guns, and at eight inches the heaviest siege guns, with 1,000 pounds to a square inch. This is too late for this Winter, but it will be as well to remember, as it has been thoroughly tested, and is known to be correct.—*N. Y. Lancet.*

THE EMPEROR OF FRANCE has, recently, conferred, upon Dr. J. Marion Sims, the Cross of the Legion of Honour, in acknowledgment of the meritorious services rendered to the great cause of Obstetrical Surgery. Dr. Sims, as is well known, first attracted public attention, during the period of his residence in Montgomery, Alabama, and had, in a subsequent practice of seven years, in New York City, honestly earned the distinction which was there awarded to him. He moved to Europe, during the late war, and now labours Professionally, both in London and Paris.

EDITORIAL.

In the March number of this Journal, it was stated, that there can never be a more appropriate time, than the present, for examining and remodelling the entire system of American Medical Education. This subject is, therefore, again presented for calm reflection, but prompt and effective disposition.

The best minds in France, England, and in different portions of Europe, are actively engaged in attempting a satisfactory solution of this great problem. While this fact is stated, by foreign writers, no information is yet given as to the results of the inquiries made.

Enough is known, however, to make it evident, even in those countries to which the American repairs for completing his Medical Education, (as it is with us, ludicrously termed,) that their system, so infinitely superior to ours, is yet regarded, by them, as radically defective, unreliable and inefficient.

If France and England, with their long protracted medical pupillage, with their wonderful and admitted advantages in schools, teachers and hospitals, confess that their systems are superficial and culpable, what confession is to be made in America?

If Medical Education is radically defective, where the student is forced to be a student, for seven and eight years, listening daily to the teachings of the great and witnessing operations, that time makes classic, what is to be said of American Medical Education which was completed, until recently, in sixteen months, and is now to be attempted in half of this period of time? When the safety of a degree, based upon a pupillage of eight years, and a residence, during a material portion of this time, in the colossal hospitals of Europe, is gravely questioned by admitted judges, accurately informed, as to all the facts, what is to be said of a system which foists upon the public, in sixteen months, and in recent instances in nine months, those officially furnished, with certificates of scientific acquirement and medical proficiency? If such a system cannot be properly characterized, what is to be done with it? This is the question which, in its relations and safe disposition, affects the dignity,

efficiency, and even the respectability of every Physician in America.

What is to be done with such a system? What action is to be taken for the prompt and efficient correction of this stupendous evil? What course is to be adopted, in regard to those Colleges which grant the great seal of a diploma, in sixteen months, and, as has been recently proposed, in even twelve or eight months.

This question is too important, not to be at once considered gravely and seriously, by every Practitioner in America. Its consideration cannot be postponed by any one, who has a true regard for the safety and respectability of his Profession. It should be considered immediately, and a satisfactory and safe disposition made of it.

It rests, fortunately, with those who controul, naturally and undeniably, the action and policy of every American Medical College—with the Practitioners of the Country, who, by withholding that support and patronage which, through their Students, are yearly given, and upon which, the existence of each College depends, can compel reform in every Institution, throughout the Country. Every Practitioner who has a Student, or who can influence a Student is, *per tanto*, responsible, for the future abuses or evil policy of American Medical Institutions.

Let every Student be advised, not once, but until success is secured, to go to that College, which, by its thorough work, protracted system of pupilage, and general management, will give to him the best education, and confer upon the Profession, through those admitted to membership, efficiency, dignity and honour.

The Practitioners of America alone can controul this question, and every member is justly responsible, for his individual action on this great subject.

American Colleges grant, at the end of each session, certificates of proficiency in regard to subjects, that confessedly have not even been reached. No Professor in America pretends, that he can, in four or five months, even cursorily examine the subjects of his special Branch. He does not examine them. He cannot of course examine the Student in regard to them, and yet he officially certifies in the diploma, that the Student has been examined, and that

the public may accept him, as a proficient in his art ! There is not a Professor in America who has the temerity to state to the Profession, that he even nominally or cursorily examines, during a course of four or five months, the elementary subjects proper to his Chair ! When this discreditable and melancholy fact can be publicly stated, without the possibility of denial, the time has already arrived for deciding this great question, and for making a safe and prompt disposition of it.

As though these patent evils and culpable courses were not enough to destroy the vitality, and even the respectability of American Schools, the grand basis, on which rests the entire structure of Medical Education, is now publicly ignored and comparatively abandoned. No one, whose testimony is worthy of notice, will pretend to deny, that, without accurate anatomical knowledge, Professional proficiency is impossible. No one can deny, that this proficiency is to be acquired only by careful and repeated dissections. Yet, these dissections are yearly becoming more superficial, infrequent and neglected. So far from requiring, at the period of graduation, each Student to exhibit certificates from the Demonstrator, proving that three or four careful and complete dissections have been made, and that the applicant for a degree, is at least, reasonably proficient in practical anatomy, most American Medical Colleges ignore the subject, and apologize to the Matriculant, for requiring him to dissect at all. Circulars contain the *apologetic* statement, that "Students will be required to take out *only one* set of Demonstrator's tickets." The Student accepts the apology, "takes out" the tickets, and the subject of dissection, as mutually painful or unpleasant, is subsequently ignored and conveniently proscribed. Most Students understand, after graduation, what is meant by the requirement to "take out" the Demonstrator's ticket ! It is only the public that is ignorant of the manner, in which this requirement is literally fulfilled.

It must be confessed, by every honest thinker, that our system of Medical Education is radically defective, inefficient and dangerous ; that it is indefensible and disgraceful.

As has been well said, "Students are lectured to death, but taught nothing." There is no time for thinking, for mental digestion and for

study ; none for examination ; none for review. The Professor knows, that even with each entire hour given to lecturing, he can only fractionally examine the great field before him, and the Student, without choice, must be present, as each lecture is delivered. The Professor is discouraged by the consciousness of an inefficiency, which insufficient time necessarily imposes upon him, and the Student is mentally exhausted, by the destructive attrition of which he is perpetually the subject. The great lecture-car is in motion, however, and each devotee throws himself unquestioningly, before its ceaseless wheels.

The system of instruction by didactic lectures, has in the history of Medicine, been hallowed by association and consecrated by time. It is a traditional custom, which centuries have made inviolate, and education almost sacred. The analyzing spirit of reform has, however, been addressed to its examination, and like all the creations of man, which time insidiously veils and protectingly adorns, this, when stripped of these adornments, is stripped of its beauty and robbed of its defences. The foundation bears the stamp of a primitive creation, and the exposed superstructure is condemned, as unsound and unsatisfactory.

In the infancy of Science, before the Press had commenced its Omnipotent mission, instruction by lecturing was unavoidable and imperative. Those who listened to the classic aphorisms of Hippocrates at Cos, and the familiar philosophy of Galen at Rome, had no alternative, for the lecturer was indispensable and lecturing an educational necessity. Is this the case now ?

Is the Student the gainer, when he exchanges the classic pages of Watson and Fergusson, and Sharpey, and Simpson, for the poor compilations of comparatively obscure and unknown lecturers ? Is he the gainer, when he abandons his favourite and distinguished authors, for the teachings even of those equally prominent ? How many, in the endless corps of teachers are known, where the authors cited are long familiar friends ? What does the Student lose, when he leaves volumes, that are monuments of living and departed greatness, to listen to such lectures, as are heard in most American Colleges. Material badly compiled, inefficiently digested and culpably delivered.

The best lecturers are not superior to the best writers, and how shall we compare, with such writers, the majority of American lecturers.

It is patent to every dispassionate thinker, that as the *best lecturers* are not superior to the best writers, that the advantages of a system of lecturing, are to be found in the tutorial, rather than in the didactic relations of the teacher : in demonstrations, explanations, and especially in examinations ; not in essays, good or bad, acceptably or wearily read, nor in crude, extemporaneous conceptions, well or garishly dressed, and creditably or culpably presented.

The great advantages of the lecture system, (to the Student at least,) are to be found, in addition to practical and judicious lectures, in careful and consecutive examinations ; in frequent demonstrations ; in familiar explanations, and in elucidating those minor, but most important details, which are necessarily omitted, in even the best works that can be published.

This fact is so patent, and so self-evident, that argument and illustration would be puerile and superfluous.

To extend, then, the advantages of such a lecture system to the Student, would be to afford to him facilities, not easily attainable elsewhere, and which he would readily appreciate, as being to a beginner more instructive and improving, than long hours of close, judicious and faithful study, in the chamber or office.

Such a lecture-system would be to the Student what a Collegiate lecture-system is intended to be : the offering of advantages not easily attained, by close reading and unaided study. This system would require a longer lecture-term in all Colleges, where such advantages are neglected, or from want of time, necessarily ignored. Long terms would be made profitably longer, and short terms would happily become known, only by reference to a discreditable history. It is a necessity which reason and justice demand, that the Student be afforded these facilities and advantages, and that something more be in the future given him, than poor and brief compilations of authors which he can, unaided, as profitably and certainly more economically examine.

There is one reform that cannot be postponed. It is the establishment of at least two classes, in each Medical College. What

would be the commentary on any literary Institution, in which he who appreciatively enjoyed the Clouds of Aristophanes, was made to listen daily to puerile versions of the Anabasis of Xenophon, or the campaigns of Caesar? Where the boy, perplexed over the elements of arithmetic, was classified with the expounder of Calculus? What would be done with such an Institution? Would it not be the appropriate object of satire and ridicule, by every one cognizant of its errors? Yet this hypothesis, in regard to literary Institutes, is with Medical Colleges actually a fact! A fact known to all, condemned by all, and, strange anomaly, supported by all! The tyro in osteology sits beside the Student of surgical anatomy, and those familiar with the blood-theories of Andral and Richardson are compelled to listen, while the novice first appreciates the immortal lesson of Harvey! The child is expected to wear the apparel of the man, and the adult is helplessly transferred to the nursery!

This is all wrong, unphilosophic, and irrational. It is an error, long admitted, and one which should, long since, have been corrected.

Here is another serious error. The Student, in his first year, or as a novice, is expected to attend and appreciate clinics that are addressed to his personal and scholastic seniors. Valuable time, that should be profitably employed in didactic or individual study, is thus irremediably and inexcusably lost. Why should the novice be thus present at such clinics? What does he understand of a lecture, based upon pathological conditions, in regard to which he is necessarily and entirely ignorant? As well might one unfurnished with the solution of Champollion, be expected to appreciate the mystic language of Egyptian hieroglyphics! As well explain to the peasant Italian, the chromatic beauties of Titian, and the marble sublimities of Michael Angelo; or describe to the Archipelagan fisherman, those classic creations of the chisel, with which Phidias first made the art-history of his country immortal.

Will not one of the Medical Colleges of America become the Pioneer in this great reform? Is it to be the Medical History of this Country, that admitted errors and incalculable wrongs continued to exist, because there was pecuniary risk in rectifying them?

There is, however, no risk, in this connection. It is the least honourable and least creditable relation in which to consider this great subject, but even thus considered, it may be safely said, that, in such a reform, there is not a pecuniary risk. It is, too, an inexcusable libel upon the Practitioners and Students of America, to assert, as is asserted, that they will only support a system which is dangerous, inefficient and discreditable.

Let some well known Medical Institution become the Pioneer in this great reform, and it will be speedily demonstrated, that the system at present adopted, is based upon a great error, and a most unjust inference. It will be seen that irrational brevity of session and ruinous economy of pecuniary tribute, now so universal, are not approved, if so far patiently tolerated, by the Profession, but on the contrary, that the great body of Practitioners will enthusiastically and gladly support that Institution which, by its honest and thorough work, confers, not discredit and injury, but true dignity, efficiency and honour, upon the title of Physician.

Will not some one of the great Colleges of America lead? Is it to be History, that only in the great cause of Medical Education, a leader could not be found?

As in all great movements, there must in this be a leader. Concert of action, State and Professional legislation, will never produce the required reform, or correct the great and ruinous evils, which are fast subverting the foundation of the Professional edifice. Concert of action, State and Professional legislation, are old and long familiar hopes; but the dear lesson of experience teaches that they are futile; they are all mirages, pleasing and seductive, but which, as often as tested by approach, have proved to be illusory and intangible.

The Practitioners of America, their Students, and the public demand a reform! The entire Medical press stands ready to support and strengthen those who will make this reform prompt, sure and radical.

What Institution will be the pioneer in this great work, and secure the gratitude, as well as the admiration and support of the Profession? The Medical College that leads, will at once secure this reward, for every one feels, that Medical Education, like

Science, is not to be hedged in by State lines, but that it is catholic, and is the property of all.

An urgent and earnest appeal is therefore made to each Practitioner, who really desires the honour and welfare of his Student, to send him, where, by long and faithful work, he is made a thorough and scientific Physician.

The composition, printing and binding of this number of the Journal, have all been executed at the Journal office, and the work is now fairly, definitely and successfully before the Public.

To secure a prompt and safe postal delivery, the Publishers of this Journal have cheerfully borne the expenses of having the entire subscription list printed, for mailing purposes. Each address is printed, to avoid the errors and delays of illegibility. Each Journal is placed in a heavy wrapper, carefully secured, and stamped with the name of the Journal, in order that every package which, from varied causes, does not reach its destination, may be returned to the mailing office, and thus secure a second attention. The subscription list is twice examined, to prevent errors and omissions in mailing each issue, and constant inquiries are personally made at the Richmond Post-office, which has uniformly mailed this Journal with care and dispatch, to learn whether any copies have been neglected or detained. All possible care is thus taken, to secure to both readers and publishers, a satisfactory delivery of the Journal. Statements by letter are, however, occasionally made, that the Journal has not been received. Such statements command immediate attention, and all subscribers are specially asked to write promptly when the Journal has not been received, but to inquire carefully, at the office, to which the Journal is directed.

MEDICAL JOURNALS.—The following Journals have been originated since the termination of the war: The Cincinnati Journal of Medicine, by Drs. G. C. Blackman, T. Parvin, and R. Bartholomew; the Memphis Medical and Surgical Monthly, by Drs. F. A. Ramsey,

D. D. Saunders, E. Miles Willett, Wm. H. White; the *Galveston Medical Journal*, by Dr. Greenville Dowell; the *Medical Record*, (New York,) by Dr. George F. Shrady; the *Detroit Review of Medicine and Pharmacy*, by Drs. Geo. Andrews, Sam'l P. Duffield, and Edward W. Jenks; the *St. Louis Medical Reporter*, by Drs. J. S. B. Alleyne and O. F. Potter.

The *Atlanta Medical Journal*, by Drs. J. G. and W. F. Westmoreland, and the *Savannah Journal of Medicine and Surgery*, by Drs. Juriah Harriss, J. B. Read and J. G. Thomas, have been revived.

All of these Journals are regularly received, and good wishes and congratulations are extended to the Editors of each of them.

The *New Orleans Medical Journal* is to be soon republished; Dr. Bennett Dowler, the Editor.

The *Southern Journal of the Medical Sciences*, by Drs. E. D. Fenner, D. Warren Brickell, and C. Beard, is to be soon commenced.

NOTICES.

✎ ACCORDING TO THE PUBLISHED TERMS of this Journal, all subscriptions will be doubled, if unpaid three months after the date of the original subscription order. Subscribers know, each, the date of the order given, and will govern themselves accordingly. It is hoped that the Publishers will not be compelled to enforce these terms, in regard to any one.

✎ THE UNDERSIGNED, has usually on hand a considerable surplus of VACCINE VIRUS, which he will take pleasure in distributing among his *Professional brethren*. Each application should contain the name and address of the Physician, *plainly written*, and two postage stamps; one for prepayment of postage, and the other for stationary and the services of an employee.

The virus offered for distribution, has been cultivated by the undersigned, for more than ten years, and has never failed to afford complete protection, so far as his observation has extended. It is

now in a very active state; no failure having occurred in his own practice, during the past three months. The crust is almost always ready for removal on the fourteenth day. In the coldest weather of Winter, it occasionally holds on until the fifteenth or sixteenth day, and in Summer it occasionally drops, on the thirteenth or twelfth. The substance of the crust is homogeneous, soluble and free from fibrous tissue. The cutaneous ulcer is superficial and heals readily.

JAMES BOLTON, M. D., Richmond, Va.

THE RICHMOND MEDICAL JOURNAL COMMISSION, organized for the purpose of examining models of all Artificial Limbs made in America, will be convened, in this City, on the 1st of May, 1866. The Commission will be in session, probably, ten or twelve days, and the result will be generally published, for the guidance and benefit of all relatively interested.

AMERICAN MEDICAL ASSOCIATIONS.—PRIZES FOR 1866—
Two of \$100 Each.—1. All communications, with motto attached, and name, with motto, in sealed envelope, must be sent to the Chairman of the Prize Committee, Dr. Austin Flint, 257 Fourth Avenue, New York City, on or before April 15, 1866.

2. If the authorship of an essay is declared to any member of the Committee, said essay shall not be considered in competition for the prizes.

OBITUARY.

DIED, in Williamsburg, Va., July 12th, 1862, after an illness of many weeks, Dr. JOHN GALT WILLIAMSON, the "Beloved Physician."

He was a native of Norfolk, Va., but had been, for many years, a resident of Williamsburg, and, for more than thirty years, a Practitioner of Medicine.

The sole object of his life was, to do good; and myriads of his patients cherish his memory with feelings of grateful love, and render the full meed of appreciation of his abnegation of self, and entire indifference as to all earthly reward.

His love of the fine arts, fine literary taste and skill as an artist, were eminent, but always subservient to his enthusiasm, as a Physician. The exquisitely beautiful emanations of his pencil shadowed forth the noble thoughts, which ever filled his graceful mind.

In early life, he was a Student of William and Mary College, and afterwards a graduate of the University of Pennsylvania—for a series of years, Assistant Physician at the Eastern Lunatic Asylum, and the fit associate and companion in Science of his cousin, the gifted and lamented Dr. John M. Galt.

Death our beloved friend met, with all the calmness of one, who has naught to dread, and, in love and faith, and without one fear, we render back his ransomed spirit unto Him who gave it.

MEDICUS.

BOOKS, JOURNALS, ETC., RECEIVED.

- Biographical Sketches of Living New York Surgeons. By S. W. Francis, A. M., M. D. New York. John Bradburn. 1866.
- The Living Forces of the Universe. By G. W. Thompson. Philadelphia. Howard Challear. 1866. (From the Author.)
- The Temperature of the Body as a Means of Diagnosis in Tubercular Phthisis. By Sidney Ringer, M. D. London. Walton & Maberly. 1865.
- Descriptive Catalogue of Fluid and Solid Extracts. Prepared by Henry Thayer & Co. Cambridgeport, Mass. 1866.
- Catalogue of Bellevue Hospital Medical College. 1866.
- Prevention of Asiatic Cholera. By E. M. Snow, M. D. (From the Author.)
- Report upon Asiatic Cholera. Ibid.
- Diarrhoea and Cholera. Cause; Cure, through the Agency of the Nervous System, by means of Ica. By John M. Chapman, M. D., etc. J. B. Lippincott & Co. Philadelphia. (From Publishers.)
- Report of Committee on Medical Education to the Medical Society of New York. (From Prof. Howard Townsend.)
- Extract from an Unpublished Essay on Physical Force. By Louis Mackall, M. D. (From the Author.)
- Report of the Pennsylvania Hospital for the Insane. By Thomas S. Kirkbride, M. D.
- Report of a Committee of the Boston Society for Medicine on the alleged dangers which accompany the inhalation of the Vapour of Sulphuric Ether. (From F. D. Lente, M. D.)
- The Turkish Bath. By Erasmus Wilson.
- Analysis of the Rockbridge Alum Springs, Va.
- Catalogue of the College of Physicians and Surgeons, N. Y., from 1807 to 1865.
- Sulphuric Ether and Chloroform as Anesthetics; their relative safety. By F. D. Lente, M. D. (From the Author.)
- Sixth Annual Report of Clifton Hall, a private Hospital for Mental Diseases. By R. A. Given, M. D. (From the Author.)
- Annual Report of the Surgeon-General U. S. A.; for 1865.
- The Pacific Medical and Surgical Journal. January and February, 1866.
- Medical News and Library. (Not regularly received.)
- London Lancet. March, 1866.
- Boston Medical and Surgical Journal. March, 1866.
- Chicago Medical Journal. March, 1866.
- Philadelphia Medical and Surgical Reporter. March, 1866.
- St. Louis Medical and Surgical Journal. March, 1866.
- Canada Medical Journal. March, 1866.
- American Journal of Pharmacy. March, 1866.
- Buffalo Medical and Surgical Journal. March, 1866.
- American Druggist's Circular. March, 1866.
- Hall's Journal of Health. March, 1866.
- The New York Journal. March, 1866.
- Dental Cosmos. March.
- The Memphis Medical and Surgical Monthly. March, 1866.
- The Cincinnati Journal of Medicine. March, 1866.
- The Galveston Medical Journal. February, 1866.
- The Atlanta Medical and Surgical Journal. March, 1866.
- New York Lancet. March, 1866.

 NOTICE.—Messrs. S. E. COHEN and GEORGE COHEN, Philadelphia, Pa., are General Agents for this Journal. They are authorised to give receipts for all accounts paid, and to execute contracts for advertisements.

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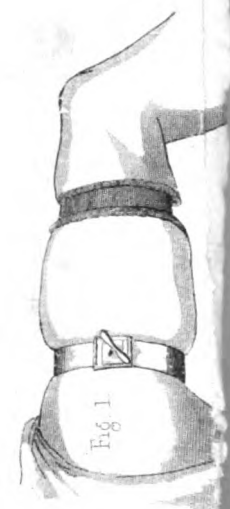


Fig. 1



Fig. 2

The Richmond Medical Journal.

MAY, 1866.

ORIGINAL COMMUNICATIONS.

**ART. I.—LAST WOUND OF THE LATE GEN. JACKSON (STONEWALL).—
THE AMPUTATION OF THE ARM—HIS LAST MOMENTS AND DEATH.**
By HUNTER MCGUIRE, M. D., Prof. of Surgery, in the Medical
College of Virginia, and late Medical Director of General
Jackson's Command.

Supported upon either side by his aids, Captains James Smith and Joseph Morrison, the General moved slowly and painfully towards the rear. Occasionally resting for a moment, to shake off the exhaustion which pain and the loss of blood produced, he at last reached the line of battle, where most of the men were lying down, to escape the shell and cannister, with which the Federals raked the road. General Pender rode up here to the little party, and asked who was wounded, and Captain Smith, who had been instructed by General Jackson to tell no one of his injury, simply answered, "a Confederate officer;" but Pender recognised the General, and springing from his horse, hurriedly expressed his regret, and added that his lines were so much broken, he feared it would be necessary to fall back. At this moment the scene was a fearful one. The air seemed to be alive with the shrieks of shells and the whistling of bullets; horses, riderless and mad with fright, dashed in every direction; hundreds left the ranks and fled to the rear, and the groans of the

wounded and dying, mingled with the wild shouts of others to be led again to the assault. Almost fainting as he was, from loss of blood, fearfully wounded, and as he thought, dying, Jackson was undismayed by this terrible scene. The words of Pender seemed to rouse him to life. Pushing aside the men who supported him, he stretched himself to his full height, and answered feebly, but distinctly enough to be heard above the din of the battle, "General Pender, you must hold on to the field, you must hold out to the last." It was Jackson's last order upon the field of battle. Still more exhausted by this effort, he asked to be permitted to lie down for a few moments, but the danger from the fire, and capture by the Federal advance, was too imminent, and his aids, hurried him on. A litter having been obtained, he was placed upon it, and the bearers passed on as rapidly as the thick woods and rough ground permitted. Unfortunately, another one of the bearers was struck down, and the litter having been supported at each of the four corners by a man, fell and threw the General to the ground. The fall was a serious one, and as he touched the earth, he gave, for the first time, expression to his suffering, and groaned piteously.

Captain Smith sprang to his side, and as he raised his head, a bright beam of moonlight, made its way through the thick foliage, and rested upon the pale face of the sufferer. The Captain was startled by its great pallor and stillness, and cried out, "Oh! General, are you seriously hurt?" "No," he answered, "don't trouble yourself, my friend, about me," and presently added something about winning the battle first, and attending to the wounded afterwards. He was placed upon the litter again, and carried a few hundred yards, when I met him with an ambulance. I knelt down by him, and said, "I hope you are not badly hurt, General." He replied, very calmly, but feebly, "I am badly injured, Doctor; I fear I am dying." After a pause he continued, "I am glad you have come. I think the wound in my shoulder is still bleeding." His clothes were saturated with blood, and hæmorrhage was still going on from the wound. Compression of the artery with the finger arrested it, until lights being procured from the ambulance, the handkerchief which had slipped a little, was readjusted. His calmness amid the dangers which surrounded him, and at the supposed

presence of death, and his uniform politeness, which did not forsake him, even under these, the most trying circumstances, were remarkable. His complete control too, over his mind, enfeebled as it was, by loss of blood, pain, &c., was wonderful. His suffering at this time was intense; his hands were cold, his skin clammy, his face pale, and his lips compressed and bloodless; not a groan escaped him—not a sign of suffering, except the slight corrugation of his brow, the fixed rigid face, and the thin lips, so tightly compressed, that the impression of the teeth could be seen through them. Except these, he controlled, by his iron will, all evidence of emotion, and more difficult than this even, he controlled that disposition to restlessness, which many of us have observed upon the field of battle, attending great loss of blood. Some whiskey and morphia were procured from Dr. Straith, and administered to him, and placing him in the ambulance, it was started for the Corps Field Infirmary, at the Wilderness Tavern. Col. Crutchfield, his Chief of Artillery, was also in the ambulance wagon. He had been wounded very seriously in the leg, and was suffering intensely.

The General expressed, very feelingly, his sympathy for Crutchfield, and once, when the latter groaned aloud, he directed the ambulance to stop; and requested me to see if something could not be done for his relief. Torches had been provided, and every means taken to carry them to the hospital, as safely and easily as possible. I sat in the front part of the ambulance, with my finger resting upon the artery, above the wound, to arrest bleeding if it should occur. When I was recognised by acquaintances, and asked who was wounded, the General would tell me to say, "a Confederate officer." At one time, he put his right hand upon my head, and pulling me down to him, asked if Crutchfield was dangerously wounded. When answered "No, only painfully hurt," he replied, "I am glad it is no worse." In a few moments after, Crutchfield did the same thing, and when he was told that the General was very seriously wounded, he groaned and cried out, "Oh, my God!" It was for this, that the General directed the ambulance to be halted, and requested that something should be done for C.'s relief.

After reaching the hospital, he was placed in bed, covered with blankets, and another drink of whiskey and water given him. Two

hours and a half elapsed before sufficient reaction took place, to warrant an examination. At two o'clock Sunday morning, Surgeons Black, Walls and Coleman being present, I informed him that chloroform would be given him, and his wounds examined. I told him that amputation would probably be required, and asked if it was found necessary, whether it should be done at once. He replied promptly, "Yes, certainly; Doctor McGuire, do for me whatever you think best." Chloroform was then administered, and as he began to feel its effects, and its relief to the pain he was suffering, he exclaimed, "What an infinite blessing," and continued to repeat the word "blessing," until he became insensible. The round ball, (such as is used for the smooth-bore Springfield musket) which had lodged under the skin, upon the back of his right hand, was extracted first. It had entered the palm, about the middle of the hand, and had fractured two of the bones. The left arm was then amputated, about two inches below the shoulder, very rapidly, and with slight loss of blood, the ordinary circular operation having been made. There were two wounds in this arm, the first and most serious was about three inches below the shoulder joint, the ball dividing the main artery, and fracturing the bone. The second was several inches in length; a ball having entered the outside of the forearm, an inch below the elbow, came out upon the opposite side, just above the wrist. Throughout the whole of the operation, and until all the dressings were applied, he continued insensible. Two or three slight wounds of the skin of his face, received from the branches of trees, when his horse dashed through the woods, were dressed simply with isinglass plaster. About half past three o'clock Colonel (then Major) Pendleton, the Assistant Adjutant General, arrived at the hospital, and asked to see the General. He stated that Gen. Hill had been wounded, and that the troops were in great disorder. General Stuart was in command, and had sent him to see the General. At first, I declined to permit an interview, but the Colonel urged that the safety of the army and success of the cause depended upon his seeing him. When he entered the tent, the General said, "Well, Major, I am glad to see you, I thought you were killed." Pendleton briefly explained the condition of affairs, gave Stuart's message, and asked what should be done.

General Jackson was at once interested, and asked in his quick, rapid way, several questions. When they were answered, he remained silent for a moment, evidently trying to think; he contracted his brow, set his mouth, and for some moments was obviously endeavoring to concentrate his thoughts. For a moment it was believed he had succeeded, for his nostril dilated, and his eye flashed its old fire, but it was only for a moment; his face relaxed again, and presently he answered very feebly and sadly, "I don't know—I can't tell; say to General Stuart he must do what he thinks best." Soon after this, he slept for several hours, and seemed to be doing well. The next morning he was free from pain, and expressed himself sanguine of recovery. He sent his aid-de-camp, Morrison, to inform his wife of his injuries, and to bring her at once to see him. The following note from General Lee, was read to him that morning by Captain Smith: "I have just received your note, informing me that you were wounded. I cannot express my regret at the occurrence. Could I have directed events, I should have chosen, for, the good of the country, to have been disabled in your stead. I congratulate you upon the victory which is due to your skill and energy." He replied, "General Lee should give the praise to God." About ten o'clock, his right side began to pain him so much, that he asked me to examine it. He said he had injured it, in falling from the litter the night before, and believed that he had struck it against a stone or the stump of a sapling. No evidence of injury could be discovered by examination; the skin was not broken or bruised, and the lung performed, as far as I could tell, its proper functions. Some simple application was recommended, in the belief that the pain would soon disappear.

At this time, the battle was raging fearfully, and the sound of the cannon and musketry could be distinctly heard at the hospital. The General's attention was attracted to it from the first, and when the noise was at its height, and indicated how fiercely the conflict was being carried on, he directed all of his attendants, except Captain Smith, to return to the battle-field, and attend to their different duties. By eight o'clock, Sunday night, the pain in his side had disappeared, and in all respects he seemed to be doing well. He inquired minutely about the battle, and the different troops engaged,

and his face would light up with enthusiasm and interest, when told how this brigade acted, or that officer displayed conspicuous courage, and his head gave the peculiar shake from side to side, and he uttered his usual "good, good," with unwonted energy, when the gallant behaviour of the "Stonewall Brigade" was alluded to. He said, "The men of that brigade will be, some day, proud to say to their children, 'I was one of the Stonewall Brigade.'" He disclaimed any right of his own to the name Stonewall. "It belongs to the Brigade and not to me."

This night he slept well, and was free from pain. A message was received from General Lee the next morning, directing me to remove the General to Guinea's Station, as soon as his condition would justify it, as there was some danger of capture by the Federals who were threatening to cross at Ely's Ford. In the meantime, to protect the hospital, some troops were sent to this point. The General objected to being moved, if, in my opinion, it would do him any injury. He said he had no objection to staying in a tent, and would prefer it, if his wife, when she came, could find lodging in a neighbouring house, "And if the enemy does come," he added, "I am not afraid of them; I have always been kind to their wounded, and I am sure they will be kind to me." General Lee sent word again, late that evening, that he must be moved if possible, and preparations were made to leave the next morning. I was directed to accompany, and remain with him, and my duties with the Corps, as Medical Director, were turned over to the Surgeon next in rank. General Jackson had previously declined to permit me to go with him to Guinea's, because complaints had been so frequently made, of General officers, when wounded, carrying off with them, the Surgeons belonging to their commands. When informed of this order of the Commanding General, he said, "General Lee has always been very kind to me, and I thank him." Very early Tuesday morning, he was placed in an ambulance, and started for Guinea's Station, and about eight o'clock that evening he arrived at the Chandler House, where he remained till he died. Captain Hotchkiss, with a party of engineers, was sent in front to clear the road of wood, stone, etc., and to order the wagons out of the track to let the ambulance pass. The rough teamsters sometimes refused to

move their loaded wagons out of the way for an ambulance, until told that it contained Jackson, and then, with all possible speed, they gave the way, and stood with hats off, and weeping, as he went by. At Spottsylvania C. H., and along the whole route, men and women rushed to the ambulance, bringing all the poor delicacies they had, and with tearful eyes they blessed him, and prayed for his recovery. He bore the journey well, and was cheerful throughout the day. He talked freely about the late battle, and among other things, said that he had intended to endeavor to cut the Federals off from the United States Ford, and taking a position between them and the river, oblige them to attack him; and he added, with a smile, "My men sometimes fail to drive the enemy from a position; but they always fail to drive us away." He spoke of Rodes, and alluded in high terms to his magnificent behaviour on the field, Saturday evening. He hoped he would be promoted. He thought promotions for gallantry should be made at once, upon the field, and not delayed; made very early, or upon the field, they would be the greatest incentives to gallantry in others. He spoke of Colonel Willis,* who commanded the skirmishers of Rodes' Division, and praised him very highly, and referred to the death of Paxton and Boswell very feelingly. He alluded to them as officers of great merit and promise. The day was quite warm, and at one time he suffered with slight nausea. At his suggestion, I placed over his stomach a wet towel, and he expressed great relief from it. After he arrived at Chandler's house, he eat some bread and tea with evident relish, and slept well throughout the entire night. Wednesday he was thought to be doing remarkably well. He eat heartily, for one in his condition, and was uniformly cheerful.

I found his wounds to be doing very well to-day. Union by the first intention, had taken place, to some extent, in the stump, and the rest of the surface of the wound exposed, was covered with healthy granulations. The wound in his hand gave him little pain, and the discharge was healthy. Simple lint and water dressings were used, both for the stump and hand, and upon the palm of the latter, a light, short splint was applied, to assist in keeping at rest, the fragments of the second and third metacarpal bones. He

* Subsequently killed in battle.

expressed great satisfaction when told that his wounds were healing, and asked if I could tell from their appearance, how long he would probably be kept from the field. Conversing with Capt. Smith, a few moments afterwards, he alluded to his injuries, and said, "Many would regard them as a great misfortune, I regard them as one of the blessings of my life." Captain S. replied, "All things work together for good to those that love God." "Yes," he answered, "that's it, that's it."

At my request, Dr. Morrison came to-day, and remained with him.

About one o'clock Thursday morning, while I was asleep upon a lounge in his room, he directed his servant, Jim, to apply a wet towel to his stomach, to relieve an attack of nausea, with which he was again troubled. The servant asked permission to first consult me, but the General knowing that I had slept none, for nearly three nights, refused to allow the servant to disturb me, and demanded the towel. About daylight I was aroused, and found him suffering great pain. An examination disclosed pleuro-pneumonia of the right side. I believed, and the consulting physicians concurred in the opinion, that it was attributable to the fall from the litter, the night he was wounded. The General, himself, referred it to this accident. I think the disease came on too soon after the application of the wet cloths, to admit of the supposition, once believed, that it was induced by them. The nausea, for which the cloths were applied that night, may have been the result of inflammation already begun. Contusion of the lung, with extravasation of blood in his chest, was probably produced by the fall referred to, and shock and loss of blood, prevented any ill effects until reaction had been well established, and then inflammation ensued. Cups were applied, and mercury, with antimony and opium, administered.* Towards the evening, he became better, and hopes were again entertained of his recovery. Mrs. Jackson arrived to-day, and nursed him faithfully to the end. She was a devoted wife, and earnest Christian, and endeared us all to her by her great kindness and gentleness. The General's joy at the presence of his wife and

* A detailed account of the treatment is prevented by the loss of notes kept of the case. These notes, with other papers, were captured by the Federals, March, 1865.

child was very great, and for him unusually demonstrative. Noticing the sadness of his wife, he said to her tenderly, "I know you would gladly give your life for me, but I am perfectly resigned. Do not be sad; I hope I may yet recover. Pray for me, but always remember in your prayers to use the petition, 'Thy will be done.'" Friday his wounds were again dressed, and although the quantity of the discharge from them, had diminished, the process of healing was still going on. The pain in his side had disappeared, but he breathed with difficulty and complained of a feeling of great exhaustion. When Dr. Breckinridge (who with Dr. Smith, had been sent for in consultation) said he hoped that a blister, which had been applied, would afford him relief, he expressed his own confidence in it, and in his final recovery.

Dr. Tucker, from Richmond, arrived on Saturday, and all that human skill could devise was done, to stay the hand of death. He suffered no pain to-day, and his breathing was less difficult, but he was evidently hourly growing weaker.

When his child was brought to him, to-day, he played with it for some time; frequently caressing it, and calling it his "little comforter." At one time, he raised his wounded hand above its head, and closing his eyes, was for some moments, silently engaged in prayer. He said to me, "I see from the number of Physicians, that you think my condition dangerous, but I thank God, if it is His will, that I am ready to go." About daylight, on Sunday morning, Mrs. Jackson informed him that his recovery was very doubtful, and that it was better that he should be prepared for the worst. He was silent for a moment, and then said: "It will be infinite gain to be translated to Heaven." He advised his wife, in the event of his death, to return to her father's house, and added, "You have a kind and good father, but there is no one so kind and good as your Heavenly father." He still expressed a hope of his recovery, but requested her, if he should die, to have him buried in Lexington, in the Valley of Virginia. His exhaustion increased so rapidly, that at eleven o'clock, Mrs. Jackson knelt by his bed, and told him that before the Sun went down, he would be with his Saviour. He replied, "Oh, no! you are frightened my child; death is not so near; I may yet get well." She fell over upon the bed, weeping bitterly, and told him again that the Physicians said

there was no hope. After a moment's pause, he asked her to call me. "Doctor, Anna informs me that you have told her, that I am to die to-day; is it so?" When he was answered, he turned his eyes towards the ceiling, and gazed for a moment or two, as if in intense thought, then replied, "Very good, very good, it is all right." He then tried to comfort his almost heart-broken wife, and told her he had a good deal to say to her, but he was too weak. Colonel Pendleton came into the room about one o'clock, and he asked him, "Who was preaching at headquarters to-day?" When told that the whole army was praying for him, he replied, "Thank God—they are very kind." He said: "It is the Lord's day; my wish is fulfilled. I have always desired to die on Sunday."

His mind now began to fail and wander, and he frequently talked as if in command upon the field, giving orders in his old way; then the scene shifted, and he was at the mess-table, in conversation with members of his staff; now with his wife and child; now at prayers with his military family. Occasional intervals of return of his mind would appear, and during one of them, I offered him some brandy and water, but he declined it, saying, "It will only delay my departure, and do no good; I want to preserve my mind, if possible, to the last." About half-past one, he was told that he had but two hours to live, and he answered again, feebly, but firmly, "Very good, it is all right." A few moments before he died, he cried out in his delirium, "Order A. P. Hill to prepare for action! pass the infantry to the front rapidly! tell Major Hawks"—then stopped, leaving the sentence unfinished. Presently, a smile of ineffable sweetness spread itself over his pale face, and he said quietly, and with an expression, as if of relief, "Let us cross over the river, and rest under the shade of the trees;" and then, without pain, or the least struggle, his spirit passed from earth to the God who gave it.

ART. II.—CASE OF UNUSUAL DEFORMITY OF THE HIPS FROM MUSCULAR CONTRACTION. By R. A. KINLOCH, M. D., Charleston, S. C.

I shall offer only the prominent features of the history from memory. The patient came to me from an interior District of the

State. He was eighteen years of age, and had, up to a year or eighteen months previous, been a healthy, vigorous boy, doing, during many years, the usual field work of a plantation. Without obvious cause, he was noticed to be growing inactive, and finally, after some months, appeared so crippled in his back, or hips, as to be an object of serious concern to his family. The diseased condition progressed slowly; the boy never complained, and at first his awkward gait was thought by his fellow-workers to be assumed, or to indicate indisposition for work. When attention was first directed to him, the only answer he could give to inquiries, was that he felt an increasing stiffness and weakness about his loins and hips; he was cheerful, and retained good appetite and digestion. His locomotion growing more defective, he was removed from the field, and put at light work about the yard. No manifest improvement following, he was, under Medical advice, sent to the City for operation or treatment. The accompanying sketches, made a few days after his arrival here, will give an idea of his general condition and



FIG. 1.



FIG. 2.

appearance when presented for my examination. From the boy, I could glean no farther details of the history of his affection than those given above. Upon directing him to walk, he did so with much effort; his advance was slow, and attended with a peculiar lateral rocking, tottering motion. The thighs were *extended*,

abducted and *everted* to an extreme degree; the legs appeared *bowed* at the knee, and were *slightly flexed* upon the thighs. The attitude reminded one of the first position of the dancing-master (Fig. 1). The spine sank in at the loins, while the abdomen and chest arched forwards, as may be noticed in Fig. No. 2. *Adduction* and *inversion* of the thighs were impossible; *flexion* of the thighs was very limited; flexion and extension at the knees and ankles were very well performed. Upon grasping the thighs, or legs, and attempting to rotate, flex, or adduct the thighs, there was manifest great muscular rigidity and resistance. Upon using the extremity as a lever, while the patient was recumbent, his body could be readily raised or turned, upon attempting flexion or rotation of the thigh. The sitting position was extremely difficult and awkward. The thighs being fixed in a line, nearly corresponding with the axis of the body, the patient could only use the ordinary chair, by resting the buttocks, or *tuber ischii*, upon the anterior edge of the seat; the thighs then descended almost perpendicularly, while the legs were flexed and doubled up under the thighs—one a little in advance of the other. At times, the legs would be stretched out, and the spine inclined backwards, to rest against the upper margin of the chair-back. It will be understood that the deformity, with the symptoms thus briefly described, pertained to both extremities; there was, however, a slight difference in the degree of deformity, in favor of the left extremity.

The rigidity of the muscles about the hip, the attitude of the patient, and other features of the case, conformed in a great measure, to the symptoms attached to the disease described by Mr. Adams, and Mr. R. W. Smith, as "*Chronic Rheumatic Arthritis* of the hip." And yet, a careful examination soon convinced me, that the hip-joint was not specially or primarily involved in the disease. Its motions, though restricted, were smooth; there was no osseous crepitation or cartilaginous grating, and there had always been an entire absence of the painful symptoms, usually connected with a diseased capsule or diseased osseous structures. The muscles about the hip, were evidently the parts involved. The antagonistic function of certain groups of these, had been deranged or suspended. There was no discoverable paralysis of any muscle, but rather a

tonic spasm of a certain set, while the antagonistic ones seemed to retain their usual contractility. In other words, the normal antagonism of the muscles about the hip had been destroyed, simply by the abnormal contraction of a certain group. But how had this condition been developed? The symmetrical character of the disease, led me to impute this to some *centric* nervous irritation. A disturbance of the antagonistic relation of muscles, whether of centric or eccentric origin, is more commonly seen affecting the knee, ankle or foot. And when the hip-joint does suffer from such disturbance, the characteristic condition is very different from that of the case now presented. It is usually a "*curvature*" of the hip, or contraction of the thigh upon the belly, from permanent contraction of the flexing muscles. In rarer cases reported, the thighs have been drawn inwards by contraction of the short *adductor* and *pectineal* muscles. This latter deformity, Dr. Gross alludes to, as occurring occasionally in young boys, from five to eight years of age, and not traceable to any special cause. (Gross' Surgery, 1st Edition, vol. ii, page 1150.) In the case before us, the proper external rotators of the thigh, were mainly at fault; the *glutæi* also, as rotators and abductors, were largely implicated, and other muscles to a less degree. The *sartorius* was included in the latter class; its tension was marked, but this I attributed to its long relaxation from the continued eversion of the thigh.

As the first and most important means of relieving the patient, I determined upon the section of the external rotators of the thigh. I obtained the assistance of two of my most skillful Medical friends. They according with my views, I proceeded, the patient being under chloroform, to operate as follows:

The integument was punctured, a little above the most prominent point of the great trochanter. I then introduced a blunt-pointed tenotome, made unusually long and strong, and forced it under the border of the great *glutæal* muscle downwards and inwards, toward the posterior surface of the small trochanter; next, by firm pressure, and slight sawing motion, I cut through all the rotator muscles that are attached to the intertrochanteric line. The knife was then retracted—the thumb of the left hand, pressing upon the track of

the deep wound, being made to follow its retreating point, so as to prevent the entrance of air, and to control hæmorrhage, until its point reached the original puncture in the skin ; its direction was then reversed, and the point pushed on, until the cutting margin of the blade covered the muscles running to the trochanteric fossa. By pressure, and slight sawing, these muscles were divided, as the knife passed down to that portion of the neck of the femur, between the margin of the capsular ligament and the trochanteric fossa. The knife was then slowly withdrawn. During its retraction, pressure was, as after the first incision, made over the track of the wound, and a compress of dry lint then placed over the puncture and the entire track of the wound.

Similar operative procedures were practiced upon the other hip. The compresses were finally secured by plaster and a double spica-bandage. While the incisions were being practised, an assistant made forcible efforts at inversion of the thigh, by seizing the leg and using the extremity as a lever. There occurred a decided diminution in the degree of eversion, and in the feeling of muscular rigidity about the hip, so that, after the completion of the cutting, the inner margins of the patient's feet could, with much force, be made parallel, but could not be brought in contact. There yet remained a great degree of resistance and rigidity, which the operation had not overcome, and it became a question whether other muscular structures should be divided. I was disposed to believe, that the great glutæus and the sartorius offered the chief difficulty in the way of greater success. Other opinions, to which I attached great weight, inclined to the belief, that the altered condition of the articulation, and the ligamentous structures, more immediately about it, were the obstacles that could not be overcome, and that, further, it would not be prudent, upon my view of the case, to divide the attachments of the great glutæus muscle. It was finally decided to refrain from further operation, but to interpose a compress, between the inner borders of the feet, and to fix these together, by a bandage around the feet and ankles.

The patient suffered for several days, from the constrained position. He recovered very promptly from the effects of the cutting, the wounds healing without suppuration. In from two to

three weeks, he was once more moving about, and with a decided improvement in his gait and attitude. After a month, although I felt gratified at the partial success of the treatment, I could not promise a complete cure by other operative means, and he was consequently recalled to the country. I advised that he should be made a tailor. He was, however, put to shoe-making. From time to time, I heard of his slow improvement, and two years after the date of my operation, I had the pleasure of seeing him in Columbia, where he was working at his trade. The change in his condition surprised me; the deformity had almost entirely disappeared, and he walked with great ease—could flex, extend, and rotate the thigh. No casual observation could detect any unusual peculiarity about his attitude or gait.

There is no question that the change of occupation, giving, as it did, relief to a certain set of muscles, had much to do with the boy's restoration; but at the same time, I cannot forego the gratification of claiming for Surgery, the credit of having instituted the beginning of the healthful change, which at last so far exceeded my most hopeful expectations.

ART. III.—CHLOROFORM AS AN INTERNAL REMEDY. By A. P. MERRILL, M. D., New York City.

At the last Commencement of the Bellevue Hospital Medical College, the chosen orator of the occasion, who announced himself, as neither an allopath nor a homœopath, neither heroic nor expectant, but only a lawyer, made the startling suggestion, that the three learned Professions are daily lessening their importance, by the liberal and enlightened course of their instructions. As the celebrated teacher, Fenelon, by his skillful instruction of the Dauphin, made his services unnecessary to the King, so do the most skillful theological, legal and medical teachers of the present day, in some degree, supersede the necessity of their future labours, by enlightening mankind in regard to all the practical principles of their several branches of learning. But whatever may be true in

regard to theology and law, it cannot be doubted, that medical men are slow to believe, that the value of their services is ever to be thus lessened, much less dispensed with. Yet there is abundant reason to believe, that the tendency of all liberal instruction in medicine is, to inform the masses of mankind in regard to what have been hidden secrets of Professional knowledge, and to so shape the practice of the healing art, as to bring it somewhat largely within the comprehension of the non-professional.

Under the influence of liberal-minded men, anatomy, physiology and chemistry have become common studies of the rising generation in our country, and children in our public schools are permitted to imbibe the facts and principles of natural science in the art of learning to read. Teachers of youth are no longer content with the fictions of nursery tales, and it is by no means uncommon to meet with both men and women, in all the walks of life, who are familiar at once with the nomenclature and leading principles of practical medicine. Nor is the apprehension, now entertained by well-informed Physicians just, that such knowledge will tend to the increase of charlatanry. On the contrary, it is virtually confessed, that the better the mysteries and complexities of structure and function in the human system are understood, the less likely will people be to rely upon intuitive skill and superstitious observances, in the treatment of disease. The common sense and common judgment of men, are of scarcely less value in Medicine than in Law and Divinity ; and the exclusive and learned charlatanry of each of those learned Professions is to be equally condemned. The single step from the sublime to the ridiculous is not shorter and easier, than that from the complex mysteries of polypharmacy, and the pedantic technicalities of the old school of Medicine, to the simple secrets of the nostrum venders of modern times.

There was a time, not very long ago, when medical prescriptions claimed the confidence of men, by virtue of the multiplicity of their ingredients, and the mysterious characters in which they were written, while the uninitiated were kept in equal ignorance of the nature of the malady and the means of cure ; but the introduction of more liberal views, not only simplified all combinations, but by lessening the distance between Physician and patient, induced the

latter to expect that his condition will be made known to him, as well as the means provided for relief. The popular knowledge of the most valuable remedies in use is due to the introduction of this more liberal system of medical practice; and all observation proves, that men are more likely to require the advice of skillful Physicians than before. As every Doctor, notwithstanding his own knowledge of Medicine, appeals, when attacked by disease, to his neighbouring Doctor for advice, so the well-informed non-professional man calls the best skill to his aid, whenever he needs opium, bark or mercury, although he can be taught nothing new as to the remedial qualities of these medicines.

Now, what has become true, under these liberal teachings of the Profession, of bark, opium and mercury, I would have true also of chloroform, as an internal remedy. But in regard to this, we have to contend with preconceived and erroneous notions of its poisonous qualities. These notions, wholly unfounded, have been fostered and encouraged by all classes of people, and have been sanctioned by legislative action, even to the extent of forbidding the sale of any quantity of chloroform, except upon the prescription of a Physician: and when so sold, it must be labelled *poison*, although it is the least poisonous of all the active remedies in use. But we may hope that in this enlightened era, the public mind may be disabused of such prejudice, in somewhat less time than it was of a similar prejudice, in regard to Peruvian bark.

Physicians will readily understand something of the value of chloroform, when they come to be aware of its power in the chill of fever, and all kindred affections. A remedy which will relieve chill, with its concomitant congestions, more or less severe, and that so effectually as to prevent febrile reaction, may be held to possess a power over certain forms of disease, which has been accorded to no other, and to promise results, which the most sanguine have never expected to accomplish by medical treatment. The discovery of cinchona and its alkaloids and salts, opened a new era in the practice of the healing art, which is familiar to the human mind throughout the world. The non-professional everywhere have learned the uses of these remedies in the prevention of chill. Everybody is supposed to know, that if the life of the patient can

be preserved through the chill of fever, and a general reaction established as its natural sequence, there is reason to hope for such a remission of the disease, as will justify a reliance upon quinia to prevent its return. This is a great boon to mankind, which could not long remain in obscurity, and the human race has profited by it. But we have a remedy in chloroform more simple, safe and easy of administration, which striking at the root of the matter, is capable, by a single harmless dose, which any one may administer, of curing the chill itself!

In certain localities, where periodic fever prevails in its gravest forms, and especially in subjects with whom the periodic movement has become habitual, it is probable that the disease may not always be eradicated by a single dose of chloroform, although the chill, and the congestions attending upon it, be decidedly relieved. In malarial districts, the intensity and persistency of this periodic movement, have often been such, as to withstand, for a long while, the most approved antiperiodic treatment, and it is reasonable to expect that, under such circumstances, preventive measures may become necessary, and even that a return of the chill may demand a repetition of the chloroform treatment. But in several cases in the adult subject, I have found the one hypnotic dose of chloroform sufficient to effect a cure; and I have good reason to believe, that in a large majority of cases of infantile convulsions, the single effective dose is all the child requires, although I have often followed it with quinine as a precautionary measure. But in none of these cases has the disease returned, except in one instance, on the thirty-fifth day, whether the quinine was given or not.

It is now nearly fourteen years since I first ventured to pour a teaspoonful of chloroform, into the mouth of a child, dying of convulsion from chill. The feebleness of the child's constitution, and the long continuance of the convulsion, had caused such prostration, as to afford little hope of any relief; but the child slept, recovered its pulse and warmth, and awoke in apparent health. It had no return of the disease, and from that time to the present, I have not failed in any similar case, to accomplish the same result by the same simple means. Sometimes I have succeeded with larger, and sometimes with smaller doses, and in a few cases of great

severity, and with the vital powers much exhausted, I have given chloroform by enema, as well as by the mouth, and always continued it until sleep was produced. This being secured, spasmodic action has always ceased, and recuperation begun. Indeed, as soon as the eye-lids are closed, the child may be considered safe, and only needs to be permitted to sleep quietly, as long as it will.

In a notice of my publication on this subject, a Medical journal remarks, that "the convulsions of children, are rarely fatal," and in a monograph, recently published in this city, it is stated in reference to infantile convulsions, "even in this dreaded disorder, the majority will recover, even if no interference be practiced;" but the mortuary reports of New York, show a frightful amount of mortality from this disease, such as might convince the most inveterate *expectante*, who ever waited upon Nature to cure a fatal disease, that it is inexpedient to entrust any one case to its remedial agency. Certainly, many of the cases, which I have cured with chloroform, in hypnotic doses, must have proved fatal without it; having resisted all the usual remedies, and in some instances, been abandoned as hopeless.

The following is a brief description of these much dreaded cases of infantile disease. The child is seized, often quite unexpectedly, with all the symptom of chill, as it occurs in the first stage of a febrile paroxysm, but in many instances, the chilly sensation is not great, or much complained of. In very young children it comes on unnoticed. It does not continue long—sometimes not more than fifteen minutes—before convulsive movements are observed about the mouth and face, extending quickly to the eyes and limbs, until the whole muscular system appears to be involved. The eyelids are stretched wide open, the eye-balls are blood-shot, and twitch with continual spasms, the pupils are dilated, the fingers and toes are drawn in and convulsed, and a quick succession of general convulsions, from which the arteries do not appear to be exempt, continue for one, two or three hours, during which, the pulse becomes enfeebled, the vital powers exhausted, the throat and bronchial tubes filled with mucus, and the spasms cease, only to be followed by speedy dissolution.

In spite of the remedial powers of nature, so strong in the young subject, and in spite of all the artificial remedies heretofore in use, this is the course and the issue of a majority of the cases of infantile convulsions, proceeding from the effects of congestive chill ; but my experiments with chloroform, prove, beyond all question, that a hypnotic dose of this remedy given in any part of the course of this alarming and dangerous disease, is certain to afford prompt and permanent relief. The quantity required, depends, as in other diseases and remedies, upon the age and constitution of the patient, and the intensity and duration of the disease ; but to obtain its full curative effects, it is always necessary to administer such doses as will produce sleep. This alone, is evidence of its constitutional influence, and the rule holds good with new-born infants, and with older children alike.

The remedy is equally efficacious, also, in chills and congestions in the adult subject, in concussion, sunstroke, hæmorrhage, cholera-morbus, pneumonia, delirium tremens, and in all other diseases, dependent upon, or accompanied by severe congestion, as a prominent pathological condition. Indeed, it has, in no case, failed in my hands, to relieve congestion, whether proceeding from the febrile cause, local irritation or concussion. After having observed its wonderful power in cases of infantile convulsions, I have, from analogy alone, been led to use chloroform internally, in a variety of kindred affections, and with uniform success. From the same analogy, I infer its efficacy in Asiatic cholera, in the treatment of which, it has, so far as I am informed, not yet been tried in hypnotic doses. In various parts of Europe, chloroform has been used in cholera, both by inhalation, and in small doses by the stomach, as it has been, in some parts of this country, in congestive chill ; but I have not been able to ascertain that, in any case, reliance has been placed upon its full physiological effects, as evidenced by sleep, which alone insures its curative power. It is not enough, that anæsthesia is produced by inhalation, or that partial influences over the nervous system, are obtained by small and repeated doses by the stomach. If the grave derangements of the nervous system in congestive chill, convulsions and cholera, are to be overcome, it is only by placing the patient under

the full physiological influence of chloroform, through the medium of the stomach and bowels, as evidenced, not by anæsthesia, but by sound and healthful sleep.

The largest quantity of chloroform I have given, was in a case of pulmonary hæmorrhage, in which, under urgent circumstances, half a fluid ounce was swallowed in the course of half an hour, with prompt relief to the patient, and without disagreeable or untoward effects. In some cases of infantile convulsion, relieved by full doses of chloroform, the sleep produced, although calm and healthful, was followed by temporary nervous restlessness, which subsided without remedies. In pneumonia and in delirium tremens, I have given chloroform, for several successive days, in doses of a fluid drachm and upward, with the invariable effect of producing sleep, and sometimes, when large doses of opium had failed, always affording relief to the irritations and congestions of the lungs and brain. In these and other cases, the wakefulness produced by opium, has always been relieved by chloroform, and I have sometimes suspected that there was a happy concurrence in the action of the two remedies. In no case have I observed injurious effects upon the mucous tissues, whether the chloroform was administered unmixed, or in combination with mucilage or syrup; and my own firm conviction is, that we have no other remedy which is powerful for good, that is less objectionable on account of evil results. I do not hesitate to recommend its use in the treatment of cholera, both by the stomach and by enema, depending, as I have done in other cases, upon the force of analogy; but I have little confidence in certain relief, unless the remedy be used in such quantity as may be required in each individual case, to produce sleep, or, in other words, its full physiological effects.

[Testimony in regard to the beneficial use of chloroform, as herein suggested, is respectfully requested.—ED.]

MEDICAL AND SURGICAL RETROSPECT.

I.—THE GALACTAGOGUE PROPERTIES OF FARADISATION. By
THOMAS SKINNER, M. D., Obstetric Physician to the Dispensaries,
and to the Female Orphan Asylum, Liverpool.

[The following cases of Dr. Skinner, are very interesting. Faradisation has evidently been too little used.]

CASE 1.—Early in August, 1861, I was consulted by a lady, aged about thirty-six, on account of vaginal irritation, and other morbid symptoms, evidently resulting from anæmia. The lady had been lately confined of her fifth child, under the care of an experienced accoucheur, and she was at the time suckling her infant. She was ordered moderate doses of tincture of steel, thrice daily, but this medication was followed in a few days, by complete stoppage of the milk in both breasts. The right breast had never been used for suckling since an attack of mammary abscess, some years before, so that I was only required to re-establish the flow of milk in the left breast. At the same time of the application, the patient told me that she felt a distinct sensation as of “a rush of milk to the breast.” On the 16th, the patient reported, that, *although perfectly incredulous of any good result*, yet, within a few hours of the Faradisation, a copious supply of milk was permanently established in the left breast. I was then asked by the lady, if I could do any good to the breast which had been so long useless as regards the function of lactation. I made the attempt, having little faith in the wished-for result, but I was agreeably disappointed to find that, after two brief sittings, of little more than five minutes each, the right breast became as good a “milker” as its fellow. The anæmia was successfully treated by the *effervescing carbonate of iron*, and with the best effects on the mammary secretion, and on the child, considering that effervescing drinks are so much dreaded by nurses and suckling mothers, for their bad effects upon the infant. This patient was so much struck with the power of Faradisation in increasing the secretion of milk, the bright idea occurred to her, that “a galvanic machine would not be a bad investment for a dairyman!”

CASE 2.—Mrs. —, aged twenty-one, was confined of her first child, on April 28th, 1861. Her labour was in every respect natural, and she was seemingly both robust and healthy. Within a month of her delivery, the milk began to decrease, and the child

became irritable, when artificial food had to be added to the breast-milk; the milk, however, continued steadily to lessen more and more, until it was all but entirely stopped in about a week. In this case I could divine no cause for the diminution of the secretion. Good, wholesome food, gruel, malt, and the usual stimulants, with open air exercise, were resorted to, but all in vain. On the 7th of October, 1861, I galvanized both breasts, using the "secondary" current, when the patient complained of a similar "rush of milk," as occurred in the previous case. I told the patient to return the next day, to have the treatment repeated, but she sent me word that it was not required, as a copious supply of milk had set in shortly after leaving my house. Let me add, that the lady in question, previous to the Faradisation, looked upon the treatment as "a good joke," and was quite as incredulous, as the previous patient of any good result.

CASE 3.—A strong and healthy young woman, wet-nurse to a patient of my own, from a mental cause, suffered a sudden, and all but total loss of breast-milk. One single application of galvanism restored the secretion within a few hours.

CASES 4, 5 and 6.—Were mothers, where the supply of milk was always at a minimum, and never altogether sufficient for the child. One or two applications were followed by the desired result in all of them.

CASE 7.—Mrs. H., married, and about twenty-three years of age, was confined of her first child six months ago. The breast-milk has been steadily disappearing, although her appetite, digestion, and general system, are perfectly unexceptionable. At present the quantity is so small that she cannot supply her infant with anything like a meal from both breasts, which is a source of great misery to her, as she says, that she "cannot bear to hear the cries of her half-starved babe."

On the 20th December, 1862, I applied the "combined" currents to each breast separately, as more particularly described hereafter. On arriving at home, a distance of about three miles, and not until she applied her child to the breast, did she feel what she termed "the draught." A plentiful meal of milk was drawn off by the child, which went to sleep immediately thereafter, circumstances to which both the lady and her child had been strangers for a month or more.

A good supply of milk remained that night and all next day, when the secretion again became as deficient, as before the Faradisation, and the infant began to fall off. Circumstances prevented the lady from returning to me until the 29th December, when the Faradisation was repeated, only I lengthened the duration of the

process (about ten minutes to each breast). The result was most satisfactory.

On the 28th of January last, she called to thank, and to inform me, that the supply of milk was again abundant on her return home, and I had ample proof in the appearance of the breasts and their secretion, as well as in the look of the child, that the increase in quantity continues permanent.

On the 16th of February, I received the same favourable report.

CASE 8.—M. A., aged twenty-three, wet nurse to a lady in the country, a patient of my own, was suddenly affected by a very great diminution in the supply of her breast-milk. The milk was about nine weeks old, and the infant one week. The rapid disappearance of the secretion, I believe to have been caused by the monthly nurse having told the wet nurse, that she observed her milk "failing," and from the fear of losing an excellent situation, the milk disappeared altogether for a whole day.

On the 6th February, 1863, when the poor girl was actually trembling through fear of losing her place for want of breast-milk, I galvanised both breasts, by the direct and intramammary plan, by means of the "secondary" current. Like all the other seven, she felt the current most upon the upper surface of the breasts and towards the axilla, but most when the current was passed direct from the axilla to the nipple. The "rush of milk" occurred, for the first time, on her way home, (within an hour) and it was much greater than she ever before felt. In spite of the strong emotion of fear, that seemed almost to overpower her, the quantity of milk in her breasts that night was more abundant than she ever had it, and it still continues so, without having further recourse to galvanism. In this nurse, the right breast has always been less developed than the left, but both are now more than sufficient for the child.

These eight cases comprise the whole of my experience of Faradisation, as a galactagogue.

Mode of Application and the Duration of the Faradisation.—To the uninitiated, it may be well to state, that by Faradisation is meant the *localizing of the galvanic current*, in contradistinction to the all but defunct method of passing the current through different parts of the body, or with the poles widely asunder. Localized galvanism is the discovery of the distinguished Duchenne, who, in honour of our illustrious countryman, Prof. Farady, called the new process "Faradisation."

The instrument which I have also used, is the electro-galvanic coil machine, and I have no hesitation in saying, that it is, of all forms of apparatus, the best for the purpose. The current obtained from chemical decomposition, is the easiest regulated and applied,

the most steady and constant in its action, the least painful, and the most effectual. Although I have had no experience of any machine (as a galactagogue) but the one I am about to describe, nevertheless, from my general experience of most forms of electrical and galvanic apparatus, I am much inclined to believe that the magneto-electric, voltaic, and other machines for developing the galvanic current, will effect the purpose, not excepting Pulvermacher's portable and very convenient chain battery of 60 or 120 elements, excited by vinegar.

The coil machine, which I employ, has three currents, namely, the primary, the secondary or induced, and a current composed of the primary and secondary, which I call the combined currents. The instrument is a very powerful one, the battery being composed of from three to six of Smee's cells, and yet it may be made to administer the galvanic stimulus to an infant. It was made to order by Messrs. Horn and Thornthwaite, of Newgate street, London, and it is impossible to speak too highly of it in every particular. From the above description, it will be evident that the machine is the very reverse of portable.

The *modus operandi* which I have adopted, in applying Faradisation in the above cases, is as follows :

1. *Direct*.—Both poles must terminate in a cylinder, into which is inserted a piece of sponge, well moistened with tepid water. The positive pole is to be pressed deep into the axilla, whilst the negative is lightly applied to the nipple and the areola; the current should never be stronger than what is pleasant or agreeable to the patient's feelings. Sometimes the nipple is so sensitive, that the current can hardly be made too mild. The poles are kept steadily in this position for about two or three minutes, not more.

2. *Intramammary*.—The two poles are then to be pressed into, or, as it were, imbedded in the mamma, on each side of the nipple, and to be raised and reimbedded, observing that both poles are raised and reimbedded together. This is to be done all round the nipple, and all over the breast, particularly on the upper surface, so as to stimulate, not only the gland, but also the descending superficial branches of the cervical plexus, the thoracic, and the cutaneous branches of the intercostals supplying the gland and its integument. This last part of the process may occupy from two to three minutes (not more), the first sitting. The same is to be done to the other breast, and repeated daily until the secretion is properly established. Hitherto, I have never found these means fail to restore the secretion in healthy subjects, in from one to two sittings.

It is well to remember, that the Faradisation is not to be applied

without intermission, until the milk appears in the breasts. The milk we know, requires to be *manufactured* from the blood, under the direction of a sufficient supply of nervous energy; some time must, therefore, be allowed to elapse, before the result of the Faradisation can be determined. With regard to Case No. 1, I thought that I had failed to restore the secretion, until the next visit of my patient revealed to me the error in my conclusion.

I think it right to remark, that I have not tried the effect of the *primary* current alone in any case, but only the *secondary* and combined currents, both of which seemed to me to be of equal value. I am inclined to believe, however, that the *primary* current machines will effect the purpose, though perhaps not so speedily or effectually, as machines with a *secondary* or combined current, because, Duchenne has shown, that the *primary* current chiefly stimulates the *motor*, while the *secondary* affects, most powerfully, the *sensory* nerves—both are likely, however, directly or reflexly, to stimulate the *ganglionic*, the system regulating secretion.

Remarks.—It may be objected to these cases, that the *post* may have been mistaken for the *propter hoc*, and that Faradisation had nothing to do with the results; but the fact that none of the patients believed in the agent, that a few of them laughed at it, that one of them was in *positive* dread of losing her situation, through loss of her breast-milk, that no other means beyond wholesome diet, exercise in the fresh air, and hygiene, were made use of at the same time with the Faradisation, and finally, the perfect success obtained in establishing a permanent and sufficient supply of breast milk in all of these cases, leaves little doubt in my own mind, that the happy results were the direct effect of the Faradisation. Further, let me observe that in Case No. 1, the right breast, which had *lain dormant for years* (the lady having suckled an infant in the interval, on the left breast only) was recalled into actual service, by two sittings of about five minutes each. In No. 2, where no cause for the *steady* diminution of the milk was observable, and where all the usual means by local heat, friction, warm diluents, stimulants, and starchy food, &c., were tried in vain, for a week, yet, immediately after a single sitting, not exceeding ten minutes for both breasts, the secretion was restored in full force as before. The same remarks apply more or less to No. 7. Had the Faradisation failed in Cases No. 2 and 7, a wet nurse was the only alternative.

It has been told me, that milk, secreted under the influence of the stimulus of the galvanic current, is not, or cannot be, healthy milk. Now galvanism, unlike drugs, adds no foreign ingredient to the secretion, it takes nothing from it, nor can it alter it physically, chemically, or vitally, except as regards quantity.

As well might we talk of altering the lachrymal, salivary, or any any other secretions from a healthy gland and system, which it will infallibly increase, if carefully and properly applied. *Galvanism seems only to resuscitate the vis a tergo, nature supplies and does all the rest.* But any fear of Faradisation rendering the milk unhealthy, or deleterious, is entirely set aside by the cases I have narrated; "the proof of the pudding being the eating of it," it will be granted, that the proof of the healthiness of the milk must lie in the digestion and assimilation of it; and so far as my experience goes, I found the milk secreted under the influence of galvanism, to agree admirably with all the children, the same as if galvanism had never been had recourse to. A medical friend has objected to Faradisation as a galactagogue, because he cannot see how a *permanent* supply of breast milk can be the result of one or two applications of galvanism. Now, on this point, the facts which I have stated, must speak for themselves, and if my friend, or those who are inclined to think like him, cannot or will not accept my statements as facts, then they had better make fresh observations for themselves.

Sources of Fallacy.—So far as sources of fallacy are concerned, I have no doubt there are many, and as there is one which I have already met with, I shall allude to it, by narrating the following case: A married woman, a wet nurse to a patient of my own, before she was a week in service, wished to resign her situation, because she said she had very little or no milk for the child. My patient informed me of the state of matters, and I told her there was nothing for it but galvanism. The woman strongly objected, but at last gave her consent. I applied the galvanism *secundum artem*, but next day the nurse stoutly declared she had no milk, and that she could not "*honestly*" stay. In presence of the lady, I examined the breasts, and I showed her that they were actually overflowing; and it is my firm conviction that the breasts had never been otherwise. The nurse was most probably suffering from nostalgia, and wanted to go home to her husband and child, whither she ultimately went, and I understand that she has since then, suckled the latter the usual time. This source of fallacy cannot be too earnestly borne in mind.

In conclusion, I may state, that I was not aware that Faradisation or galvanism, had previously been used with success to establish, restore, or increase the secretion of milk. I now find that Dr. Althaus, in his admirable treatise on "Medical Electricity," refers to such cases as having been observed by MM. Aubert and Becquerel. (Althaus, 1859, p. 302.)

Considering the great, and sometimes insuperable difficulties

attending the management of such cases in practice, I think that we cannot too highly appreciate the value of any safe means, likely to prove successful; and although the results of the practice in my hands may seem rather flattering, I feel confident that the same successful results will attend the well directed efforts of others.

[*Obstetrical Transactions.*

II.—TREATMENT OF ULCERS OF THE EXTREMITIES BY "SEALING." (Cases under the care of BARNARD HOLT, Esq., at the Westminster Hospital.)

In the treatment of ulcers of the legs, a novel method has recently been adopted in the Westminster Hospital by Mr. Holt, with the best effect. The treatment consists in excluding the air from the wound, during the process of granulation, and this plan is found to assist materially in rapid cicatrization, when once a healthy action is set up.

The method of applying the dressing, as practised by Mr. Holt, is as follows: The margin of the ulcer is covered with adhesive soap-plaster, half an inch wide, and a piece of oil-silk, large enough to cover both the ulcer and the plaster, having been carefully affixed by means of collodion, another edging of plaster is put on the margin. The transparency of the oil-silk allows the progress of the ulcer to be inspected with the greatest ease.

In some clinical remarks upon cases under treatment by this method, Mr. Holt observed, that "To render the treatment effective, it was necessary to remove the sealing in accordance with the amount of discharge present. When the discharge is abundant, it may be necessary to remove the first sealing on the second day; but experience shows, that as the treatment is proceeded with, so the discharge gradually diminishes in quantity, and that the granulations which, before the sealing, were pale and flabby, become florid and vigorous. Hence, the second application of the sealing may usually be allowed to remain untouched for five or six days, and the third even longer, and so on until cicatrization is complete. No dressing of any kind is required beneath the oil-silk, which should be carefully secured, so as to exclude the air. By this simple method, all irritating influences are avoided, the discharge is not too frequently removed, and the growth of healthy granulations is induced, leading to the rapid cicatrization of the ulcer."

We subjoin two cases illustrative of the treatment, for the notes of which we are indebted to Mr. Arthur Beadles, House-Surgeon to the Hospital:

William J., aged twenty-two, a sailor, admitted June 24, into Northumberland Ward, under the care of Mr. Holt, with an ulcer of the leg.

History.—About three years since, whilst on board ship, his right leg was crushed by some spars which fell upon it, and, for twelve months after this, pieces of bone came from the wound, which then healed up, and was quite well for six weeks. It then broke out into an ulcer again, and continued to enlarge up to the time of his admission.

On admission, there was an inflamed ulcer on the outer side of the right ankle, about two inches long, and one inch wide, but not very deep. There was considerable inflammatory swelling of the surrounding parts, and he complained of burning, pricking pain in the ulcer itself. Ordered a linseed-meal poultice, and a couple of days afterwards, a nitrate of silver lotion (grs. ij. aq. ʒ j.)

July 1st. The ulcer was sealed.

4th. Unsealed, and found to be diminished in circumference half an inch; resealed.

7th. Dressing renewed. Discharges a good deal.

10th. Ulcer much diminished in size.

14th. Ulcer healing rapidly, and of very small size.

25th. Discharged cured.

Martha B., aged twenty-two, a servant, admitted June 24th, into Percy Ward, under the care of Mr. Holt, with ulcers of the legs.

History.—On December 28th, 1861, she received a blow on the left leg, which gathered and was poulticed, and a large slough separated, when lotio nigra was applied. The ulcer continued to increase in size, and an ulcer appeared on the right leg, without apparent cause, about three weeks before her admission.

On admission, there was an ulcer on each of the legs, immediately below the patella. The largest, on the left leg, was of the size of the top of a small tea-cup, whilst that on the right leg was of the size of a two shilling piece. They were both very deep, with ragged edges, and discharged freely. Ordered linseed-meal poultice.

June 26th. Ulcers more healthy in appearance, and less painful.

R. Acidi nitrici dil., ℥ xv.; decocti cinchonæ, ʒ j., ter die.

27th. The depth of the ulcers much decreased, and their size diminished. The one on the left leg is about the size of a five-shilling-piece, and that on the right about the size of a shilling. Both ulcers were "sealed" according to Mr. Holt's method.

30th. Left ulcer of the size of half-a-crown, and the right of a sixpence. Ulcers resealed.

July 10th. Ulcers unsealed, and found to be much smaller. The same dressing applied.

14th. The left ulcer of the size of a shilling, and the right completely healed.

29th. Discharged.—*Med. Times and Gazette.*

III.—ON THE PREVENTION OF PITTING IN SMALL-POX.

While vaccination is generally regarded as the grand preventive of the disease, and all but universally practised, it has long been felt, that medical men would confer a great boon on society, if they could discover some means by which the disfigurement of the face could be prevented. We believe that, by a very simple application, this desirable end has been attained in the clinical wards in the Royal Infirmary; and it is in the hope that when known, it may be generally practised, that we at present draw attention to it. The application consists of a solution of india-rubber in chloroform, which is painted over the face, (and neck in women,) when the eruption has become fully developed. When the chloroform has evaporated, which it very readily does, there is left a thin elastic film of india-rubber over the face. This the patient feels to be rather comfortable than otherwise, inasmuch as the disagreeable itchiness, so generally complained of, is almost entirely removed, and, what is more important, "pitting," once so common, and even now far from rare, is thoroughly prevented, wherever the solution has been applied. It may be as well to state, that india-rubber is far from being very soluble in chloroform, so that, in making the solution, the india-rubber must be cut into small pieces, and chloroform added till it is dissolved. The medical gentleman who has introduced this treatment, has tried several other substances, but found none so generally useful. For instance, gutta percha was tried. It has the advantage of being very soluble in chloroform, and would have been a very admirable application, but for the tendency it has to tear into ribands whenever the mouth is used, or even the features play. India-rubber, on the other hand, is pliable and elastic, allowing free use of the mouth, without any danger (as a rule) of its tearing off. If, however, from some cause or other, a portion is torn off, a fresh application of the solution, by means of a large hair pencil remedies the defect, and the mask is once more complete. Several patients, who have had this india-rubber mask applied, concur in stating, that they found it agreeable to wear, and their faces were perfectly free from "pitting," although other parts of the body, such as the arms, were covered. The credit of this valuable invention and application belongs to Dr. Smart, House Physician, clinical wards, Royal Infirmary; and, while he no doubt,

in the proper quarter, will make good his claim to the honour, he will feel amply repaid, by its general adoption by his medical brethren, and the consciousness that he has done something to increase the resources of the Medical art.—*Scotsman*.

IV.—A NEW MODE OF PREPARING LUNAR CAUSTIC.

The double-nitrate of silver and soda, forms, when cast into a mould, a pencil having different properties to the ordinary lunar caustic. Its action is less that of a cauteriser, and it is hence much more suitable for application to delicate surfaces, such as the conjunctiva. It is prepared thus: Dissolve in distilled water one part of nitrate of silver, and in another portion of water one part of nitrate of soda. Mix and then evaporate; lastly fuse in a crucible, and pour into a heated and greased mould.—*Med. Cir.*

V.—ON THE COLORATION OF THE LIPS AFTER PLASTIC OPERATIONS.

In cases where it is necessary to form a new lip by a plastic operation, the newly made part may not present the natural rose colour. To remedy this defect, M. Schuh, of Vienna, in a patient under his care, devised the plan of tattooing with cinnabar. The outline of the lip having been marked with ink, an instrument, consisting of from ten to twenty pins fixed in a band, and covered with waxed thread to four lines from their points, is dipped in a paste of cinnabar and water, and plunged several times into the lip, to the depth of three or four lines. The process gives rise to very little bleeding or pain. The cinnabar, which remains on the surface of the skin, is not removed until the next day. If any part be not sufficiently coloured, the defect is easily remedied. The colour had remained a year and a half in M. Schuh's case.

[*Gaz. Hébdom. de Méd et Chir.*

ECLECTIC DEPARTMENT.

I.—A COURSE OF LECTURES ON THE PROGRESS OF SURGERY DURING THE PRESENT CENTURY. Delivered at the Royal College of Surgeons of England, in June, 1865. By Sir WM. FERGUSSON, F. R. C. S., F. R. S. Surgeon to King's College Hospital, Prof. of Surgery in the Royal College of Surgeons and Surgeon Extraordinary to H. M. the Queen.

LECTURE V—ON AMPUTATION.

Amputation! One of the meanest, and yet, one of the greatest operations in surgery! Mean, when resorted to where better may be done—great, as the only step to give comfort and prolong life. An operation, on which more has been written, if, perhaps, we except lithotomy, than on any other—on which the highest of our intellects have been engaged, and yet withal, accounted by some as the opprobrium of surgery.

I have an impression, humbly, that few men have done more than myself to obviate its necessity, and yet, I profess great admiration for the operation. It is certainly a sweeping measure; yet, although the part removed, is no longer of any account in living pathology, it may carry instruction with it. We may profit from its separate inspection; we may be taught thereby, to do better in another similar case; but surgical treatment of disease ceases with amputation, and a new field of practice opens. Our duty is with the portion of the body which is left, and that duty is so important that I know of none to exceed it, in the whole range of surgery.

I at once set aside the maudlin sentimentalism about having no amputation, as the disease may, and should, be cured by treatment—judicious, superior treatment, forsooth!—of which we have always plenty of exponents in writing, but few, alas! in practice.

I believe that amputation will never cease to be required in the practice of surgery. When our *quidnuncs* have mastered disease, so that inflammations, cancers, and tumours in bone can be subdued at will; when war shall be only an “idea,” a word, an act of the past; when peace shall appear in the Arcadian bliss represented by the brush of Edwin Landseer; when such men as Armstrong, Whitworth, Blakely, Lancaster, Mackay, Dalghren, Parrott, Rodman, and Krupp, direct their genius otherwise; when railway accidents shall be no more; when we can arrest time, and calculate

on a "renewal of life,"—then may we expect that amputation will be of the past.

It has always appeared to me remarkable, that this operation should have been called an opprobrium to surgery. It is indeed sad that a limb, susceptible of cure, should be removed. It has been recorded that of two diseased legs, one was condemned to amputation. By an awkward mistake that intended to be spared, was taken off, when the surgeon, being, as it were, put pressingly upon his mettle, cured the condemned limb! The joke is good, but let us hope that it was "a weak invention of the enemy," made by one of those jesters, who affect to hold surgery responsible for everything.

I confess, Sir, that in the biographies of our eminent men, I should like more to hear how often amputation has been averted than performed; how many diseased or damaged limbs have been cured, instead of being lopped off. I should, for my own part, prefer the character of having saved fifty limbs to that of having cut off a hundred. I am sure that I am not alone in that feeling, and I rejoice to see, as time rolls on, that it has become less the custom to note the large number of amputations at certain hospitals. The schoolmaster is abroad in surgery, as in other departments of our social circle, and the question is often put, as to how many of these vaunted amputations have really and positively been absolutely necessary. I have myself strong, and, perhaps, prejudiced opinions on the subject, and I would certainly prefer, that in the lists of operations we should see those for hernia, for stone, for obstructed breathing, for tumours, for dislocations and fractures, and others, taking precedence of "the last resource." A man or an institution, may well boast of some of these proceedings, but he should be surer of his grounds for amputation, than was the unfortunate operator whose story I have just referred to. I yield to no man in faith, that much may be done in the treatment of disease to avert operation—to avert amputation; but I am firmly convinced, that whilst men and civilization are on the face of the earth, amputation must remain as one of the great operations in surgery.

It need not be a matter of wonder, that this proceeding should have attracted so much attention; yet, it is curious to think how modern it is as, compared with other operations of note. Whilst the herniotomists and lithotomists flourished in mediæval periods, we have no account of amputators. The gentlemen of "the long knife" are of modern date in surgery; for although we have a history of amputation, chiefly for mortified limbs, from Celsus downwards, it was not until about the middle of the last century, that this operation assumed the aspect of what may be called the

modern system. We are all familiar with the dreadful accounts of the proceeding of our forefathers prior to this period. What with the gradually tightened string, the red-hot knife, to effect separation, and the boiling pitch, actual cautery, and other devices to stem the hæmorrhage, we read of horrors scarcely surpassed by those of the Inquisition, and only exceeded by the modern device of breaking a bone or bones, and burning the soft parts with "caustic arrows," or that of dividing the femur with the chain-saw, and tearing the soft tissues through, by means of an "infernal machine" called the "écraseur!"

Happily, the tendency in surgery, as regards amputation, has been to improve upon the rough work of former days; and, as much has been done within the present century in this direction, I feel that in such work as is now before me, I can scarcely do better than devote a lecture to the subject.

The great wars on the continent of Europe, towards the end of the last century, gave frequent occasions for this proceeding; and the zeal and intelligence of Baron Percy, and other French surgeons, as well as the rising spirit amongst our own, contributed to the interest felt in this proceeding. The sanguinary campaigns in the career of the first Napoleon, added zest to the knowledge already acquired; and during a large portion of this century, few operations have attracted more attention. After 1815, many surgeons who had been actively engaged with armies, began practice in private, and speedily achieved prominent positions in civil life. Then the large experience gained in warfare, was speedily brought to book in surgical annals; and ere the close of the first quarter of the century, it appeared as if the subject had been exhausted; that we had arrived at perfection; and that those who followed, had but to proceed in the same way—for better could not be, and such evils as remained, were but inherent to the process.

Yet, such a conclusion was scarcely in the ordinary course of surgery. Inquiring men were at work. It was doubted if we had reached the summit of perfection; and from that time until the present, there has been a succession of novelties, as great and remarkable as any in the history of surgery. Indeed, I know not if any single operation has been so varied; and it will now be part of my task to sketch such of these changes as seem to me most deserving of notice.

If I am not mistaken, it was more the fashion, some forty years ago, for the young in our profession to finish their surgical studies abroad, particularly in the schools of Paris. The celebrated Lisfranc was then in the zenith of his practice. Chiefly through his influence, that particular amputation by flap or flaps, had attracted

much attention amongst French surgeons, and it was destined to be soon the object of equal interest here.

Although the flap operation was familiar to most surgeons in this country by hearsay, and description—although, indeed, it was every now and then performed—it may be affirmed that, about 1820 or 1825, the circular was the ordinary method among British practitioners. A picture of a flap operation had probably never been put before the eyes of the rising generation, but those (Figs. 1 & 2) depicted by Charles Bell and others, were held to be the master-work. I have already stated, from this chair, that the essays of Mr. Liston and of Mr. Syme, published respectively in the *Edinburgh Medical and Surgical Journal*, for 1824, had great influence in calling attention to the flap operation. The personal example of these surgeons was considerable, and that of Mr. Liston, in particular, deserves special notice; for, first in private practice as a youth, pushing his way in life, and then as the leading surgeon in the Royal Infirmary of Edinburgh, the dextrous manner in which he executed this now familiar method, arrested the attention of all beholders, and the fame attached to this proceeding, executed by him in about as many seconds as there were minutes occupied in the old circular method, spread far and wide. To say nothing more of the man, the manner of the operation was indeed remarkable for the time; and it should be borne in mind, by those who have been educated in isolated or comparatively small schools, or even large hospitals, that the united classes of Edinburgh in those days numbered, when assembled in the theatre of the Royal Infirmary, something like a thousand—nearly equal to the whole of the medical schools of London, at the present time. No wonder that an operation which, with the knife, wielded by Liston's hand, seemed, compared with the old manœuvres, like a flash of lightning, attracted great attention, and that numbers attempted to imitate such an example. Besides, it was almost the only one practised by the other chief surgeons of that time in Edinburgh, and so its reputation went in all directions. Not a whisper was heard against it in Edinburgh; yet, whilst it spread with meteor-like rapidity over the British empire, there still remained many staunch upholders of the circular method. Rapidity of operation went with them for nothing. The good old method described by Roux in his "Parallel," as obtaining in London, in which some twenty minutes were expended in doing that which was done by Liston and others, in little more than the same number of seconds, was still adhered to; and the "*sat cito*" school remained contented with the old order of things. Not so, however, the mass of the rising generation in the profession. I believe I am correct in stating, that the

flap operation became that in common practice, and, in as far as I can make out, it is that in most frequent use in the present day. If we except the substitution of excision for amputation, I know of no more singular and almost universal revolution in modern practice. I say this with all deference to a large body of eminent practitioners, who have throughout adhered to the circular operation; for, in truth, whilst I have been, all my professional life, an exponent of the flap, I have had no such strong objection to the circular, as some have maintained. I have seen as good stumps from the circular operation as from the flap; I have seen as bad from the flap as from the circular; and I have long been convinced that a fault, whenever it has appeared, has in reality been more in the manner than in the method of the operation.

Many have the idea that compromises are improper; that they are indicative of weakness and want of proper spirit or energy; that men must be either on one side or the other; that things must be positively of one character, or directly the opposite. But men and things, under such circumstances, remain very stationary; it may be in some instances for good, but generally for the reverse; and to keep moving, with the times, seems almost a law of society. The spirit of surgery is essentially this, and the surgeon who is content to rest under the hallowed shade of his predecessors, must find himself in the obscurity of remote periods, as compared with the sunlit movements of the time being. Liberty of thought is allowed us all, and a large scope of liberty of action; but, in reality, our whole social system is founded on a series of compromises, and the "uncompromising man" is, in my opinion, one of the greatest of nuisances, either in surgery or in society.

A compromise, I imagine, goes far to settle what may be deemed the best method of amputation, in such important places as the arm and thigh. A little of the flap, and a little of the circular constitute, I believe, the most perfect operation; and in my own practice I have long followed out that idea.

Of the two operations, I have always thought that the circular is the most difficult. The comparative difficulty of drawing up the skin, and other tissues, so as to make bare the bone, at a sufficient height, is considerable, and a great contrast to the easy way in which this is accomplished by flaps. The facility of exposing the bone high up, is comparatively so great with flaps, that I am impressed with the idea, that more is often done in this way than is actually required; and, if I am correct in this, I believe that a larger wound is the result, than if the bone were not so freely exposed. If in the transfixion of the limb—that being the usual way of forming the flap—the knife crosses almost as high as where

the bone is to be divided, there is a greater wound made than if the transfixion were kept considerably lower; the skin on opposite sides, being cut, is wounded where it might be left entire; for after flaps of moderate extent are cut, they, with the tissues above, may be so pulled upwards, that with some circular sweeps of the knife, the bone may be denuded an inch or two higher, and so there will be a smaller opening in the skin.

Now this is the kind of compromise to which I have referred in the preceding remarks: and if in transfixing, the flaps be made purposely short, and then retraction being made, the knife be carried round the exposed tissues, which cover the bone, a cone will be formed, resembling that in the ordinary circular operation (Fig. 2), and thus by a combination—a compromise of the two methods—a covering to the end of the bone, in other words a stump, will be left superior, in my estimation, to any other.

Yet, this is only an individual opinion, and there are many who hold to the ordinary method by flap; many who still hold by the old circular, and some in recent days, who carry the flap system beyond what was ever contemplated by its early advocates. Thus, Mr. Carden and the Worcester surgeons, take especial care to exclude other soft tissues, so that skin only, shall cover the bone or bones.

Irrespective of either circular, flap, ovoid, or any other sort, that may have been fancifully named, I think it must be admitted that amputation, by almost any fashion, has made progress during the present century. I take this opportunity, however, of entering my protest against that of burning or wringing a limb off by any kind of apparatus whatever. Cheselden gave us the case of the miller, who had his arm and scapula torn off by machinery, and yet survived. Several instances of a similar kind, have since been met with. We have good data as to how the bleeding is arrested in these cases. Hands and arms, feet and legs, have been torn off by accidental rude force. A chain has been put round a rabbit's leg and drawn so tight, that the part has dropped off within a few minutes, and the like has been done on a human thigh; but I sincerely hope that these processes may never appear as part of the surgery of this or any other century. Let Cheselden and others, have due credit for treating successfully enormous and unheard of wounds, but let a due distinction be drawn between that which is possible and that which is proper.

With the exceptions alluded to, I conceive that there has been much beneficial progress in amputation in recent times, and it is part of my object in this lecture, to give illustrations to that effect.

As may have already been remarked, I do not attach so much

importance to the question of flap or circular, as many do; and whilst giving the preference, as a general practice, to the mixed manner above referred to, I believe that, with a well-performed operation in any of these ways, or with any zig-zag, which circumstances or the surgeon's fancy may dictate, a stump can be produced which shall defy adverse criticism; while by any of these methods, badly executed, any or all of the evils, pertaining to bad stumps, may be the result.

In my younger days, the grand effort of all operators, whatever the kind of an operation, was to have an abundance, or I might say, a superabundance of soft material to cover the end of the bone, and make what was called a fleshy stump. The bugbear in those days seemed to be the risk of scantiness in this respect, and hence every substance was looked to, which might afford the needful amount of soft materials. Every now and then, it was evident that mistakes were made in this direction; a greater length of soft parts was left than was needful; and occasionally, when the length seemed perfect, the flap was actually too thick to bend readily and properly up against the end of the bone or bones. This was often seen particularly marked in the flap operation in the leg, a little below the knee—a proceeding at that period mostly in fashion. If the operation were done for an accident—for example, on an athletic navy—a flap being formed, by transfixion from the muscular calf often proved a troublesome one (Fig. 3.) The skin, by this method of operation, although in reality cut lower down than the muscles, retracted more; and although that retraction was seemingly overcome in the dressing, as stitches were applied, the subsequent swelling of the muscles often burst the superficial union, and shooting between the margins of skin, presented for weeks or months, a large granulating sore which healed but slowly, much to the distress of the patient, and vexation of the surgeon. I remember well, that Mr. Liston was so much annoyed in this way, that he latterly made the posterior flap in such an operation much thinner than on former occasions; and I can speak freely of my own experience in the same operation. It is long, indeed, since I came to the conclusion that it was unwise to leave a thick muscular flap. Part of the fault, in such cases arose, I believe, in the almost uniform practice of transfixing and cutting outwards. I am by no means convinced that this is invariably the best method of performing the flap operation, and I feel assured that cutting from without inwards, is in many instances followed by the best results. But I may say, that I have seen the two extremes with regard to the substance of flaps, for in latter years some of our ablest surgeons have advocated the practice of carefully excluding all material but skin, cellular tissue, and fat.

We are greatly indebted to the surgeons of the Worcester Infirmary, Messrs. Carden, Sheppard, Budd, and Walsh, for our knowledge of upwards of sixty such cases, wherein the practice has given much satisfaction.

It would be well, in all discussions about stumps, to state the age of each. It is not easy to say when a stump is at perfection. My own idea is, that that is when it is least tender, and can bear the greatest reasonable pressure. Many months, sometimes years, elapse before this condition is most marked. In many, or most instances, it looks best when some two or three months old; but look or appearance is not perfection in a stump; its utility, its callousness, I may say, are its better attributes, and these cannot be developed for many, many months after the operation. It is a common thing for surgeons to speak of an excellent stump some three, four, or six weeks old. True, one that promises well at that date may, and, indeed, is likely to, turn out well in the long run; but many unfortunate things may befall after this, and I think it best to look to its condition some years afterwards, for it is then that its utility is tested, and this character must ever take precedence of plumpness or beauty, as we fondly call it.

I am not aware of much change in recent times upon the circular method, and am inclined to think, that upon the whole, those who follow it, are thoroughly content. But amongst the flap-men, considerable changes, besides those above referred to, have been tried. One flap has occasionally been made instead of two, or two instead of one; and instead of looking to one place or side of the limb, the flap has been made from any most suitable. Thus, one long flap has been taken in thigh, leg, and forearm, and two have been occasionally taken in the leg, one in front and one behind, or one on the outside and another on the inside, as I have seen. Yet, if we except the proposals of Mr. Teale, there has been considerable unanimity. The old single flap, from the calf of the leg, the lateral flaps in the thigh, the lateral (as they may be called) in the arm and forearm, may be considered as having been the standards of the kind for the last forty years.

Some interesting exceptions to this practice may, however, be referred to. I well remember when, in amputation in the thigh, the only supposed legitimate method, was to reserve a flap from each side (referring to various sketches). If the knife, in piercing, did not seem as if it had passed straight from front to back, or, looking to the patient being recumbent, from above directly downwards, having about the same thickness of material on each side, it was doubted if the operation had been correctly performed. Yet, I have subsequently seen all sides of the thigh reserved as opposites; in

particular, that pains have been taken to make the flaps actually in front and behind. And, if I am not mistaken, this has been the the favourite flap operation in the thigh, for the last twenty years and more. Yet its reputation is, I fancy, on the wane; and there is a rising feeling to preserve a long anterior and short posterior flap, in accordance with certain views of Mr. Teale and Mr. Carden, both because of anxiety to keep the cicatrix at the back or lower part of the stump, as also to facilitate the escape of serum and matter whilst the patient lies on his back. In former days the aim was to have the cicatrix fairly in the middle of the stump; but in recent times, the desire seems to be to have it on one side or other. I cannot but say, that I look most favourably on this latter plan. As a rule, the original tissues are better than a cicatrix; and some interesting examples of this have been developed in modern times, of which I shall take special notice in a few minutes.

Some of these recent views, I attribute largely to the proposals of Mr. Teale, of Leeds, who, in this, as in other respects, has contributed so much to the established reputation of that school of British surgery. In a series of examples, he has endeavoured to show the advantages of long flaps from one side of a limb, wherewith to cover the ends of bones, and short flaps in which the main vessels and nerves are preserved, as exemplified in these sketches, copied from his work* on the subject. Fig. 4 shows the lines of incision for amputation in the forearm, Fig. 5 those in the leg; and Fig. 6 those in the thigh.

It might be thought, that a good thing in surgery having been secured, there would be no desire for change. But there will, I suppose, always be difference of opinion as to what really is the good thing; and I am led to make this remark by the views expressed by the latest author on amputation, Mr. Henry Lee, of St. George's Hospital, who, only a few nights ago, read at the Medical and Chirurgical Society a paper expressive of the advantages of a long flap from the back of the leg, a short one from the front; the two operations being identically the same, excepting that the flaps are from reverse sides. Each author insists on the wisdom of so dividing the main vessels and nerves, that they shall not be exposed to after-pressure, and each making a feature of the angles at the ends of the flaps, in contradistinction to the semi-circles or ovals of the ordinary flaps, such as represented in Figure 3, or in this (Fig. 7), which shows an amputation by transfixing lower down the leg. One cannot but perceive novelty in Mr. Teale's flaps—being taken generally from the least muscular side of a limb; but

* Teale: On Amputation, 1858.

in Mr. Lee's, we may recognize old friends, with the features rendered somewhat angular.

In nothing, in practical surgery, has there been more pedantry displayed, than in regard to amputation. In thigh and hip, arm and shoulder, it has been made to appear as if the deviation of a line might be fatal; whereas, in reality, we may deviate line by line around a limb or joint, from vertical section to horizontal, and yet keep strictly within rational, aye, perfect surgery.

But in no respect has amputation varied, I may almost say permanently changed, more strikingly than in what was called the place of election, or selection; and here, perhaps, I come upon some of the best achievements of surgery, in this department, in modern times.

Forty, even thirty years ago, the place was rigorously defined in most localities. If a hand or diseased wrist was to be removed, a healthy part of the fore-arm, generally near the elbow, was selected. If, unhappily, amputation was performed for disease of the elbow, the maxim was to keep well up in the arm, away from inflamed or diseased tissues. If a foot or an ankle were doomed, the long knife was applied high up in the leg. I have often seen amputation performed within an inch of the knee-joint for disease of the tarsus, the leg and ankle-joint being healthy. So rigorously was the inculcation for a short stump of the leg carried out, that I have frequently seen the head of the fibula removed, so that it might not remain as a round projection on the stump.

Gradually, however, a spirit of conservatism has arisen, even in the matter of amputation; and, if I am not much mistaken, there is a strong feeling in favor of long stumps, not only because more of the body is thereby preserved, but because the stumps themselves are more efficient as to leverage, and also as to the endeavoring qualities of their coverings.

But there is nothing more remarkable in the modern history of amputation, than its performance at certain joints. Naturally it may now be thought, that I am about to allude to the great amputations at the shoulder and hip. Not so, however; for I entertain the opinion, that these operations have been performed frequently, when less extensive measures would have sufficed.

In 1826, Mr. Syme wrote, that "amputation at the shoulder-joint for caries, is an occurrence by no means rare in civil practice;" and as this was said, in his early attempts, to press into notice the operation of excision of the head of the humerus—a proceeding then only recognized by a few—it may be presumed, that he had fair reasons for this assertion.

I should be untrue to the position I hold, were I to decry ampu-

tation, either at the shoulder or the hip-joints. On the contrary, I consider them as amongst the best achievements in surgery, when judiciously applied. But I believe that there is still much to be impressed on the surgical mind in regard to amputation at other joints; and with a few examples of the kind, I shall close this lecture.

Happily for the character of surgery, amputation in the arm, for disease of the elbow may now be considered obsolete. I feel inclined to say as much for injuries of the elbow strictly local. There may be an exception every now and then to that general rule, as I hope it may now be considered. If such there be, why should the surgeon almost invariably get into the middle of the arm for his incisions? Why should he not take the covering of the end of the humerus from the fore-arm? If he wants skin only, there will most likely be plenty of it; if muscle, he has the whole fleshy mass at the head and front of the fore-arm to deal with. I feel convinced that amputation near the middle of the arm has often been done, when this more conservative process might have sufficed.

Then at the wrist. How often, may I ask, has amputation been done at this joint? I know that it has been done, but I have never seen it, excepting in my own practice. Every now and then good results of resection of the wrist are effected, as has been proved years ago by Mr. Stanley, and more recently by Mr. Butcher and Mr. Lister; but from my personal experience, after repeated trials, I am far from being sanguine of the general applicability of excision in this locality. Yet I can speak in unmeasured terms of approval of amputation at this part, in preference to amputation higher up in the fore-arm. Here is a stump of the sort—a genuine curiosity, if I mistake not.

Again look to the knee as the seat of amputation. Twelve months ago, I asked, in this theatre, how many surgeons in Britain had performed this operation. I was aware, at the time, how much had been done by Mr. Syme, Mr. Liston, Mr. Lane, Mr. Erichsen, and a few others, but particularly by Mr. Carden, of Worcester, whose doings, in my opinion, reflect vast credit on modern surgery. In the *British Medical Journal* for April, 1864, Mr. Carden published the particulars of thirty-one cases, in which he had performed this operation, with an expression of opinion that it was likely to be more successful, and that the stumps were better than in ordinary amputation in the thigh. Of that I have long had no doubt. More than twenty years ago, I had satisfied myself on that score; and had it not been that I fancied I had struck a richer vein in surgery, by the revival of excision of the knee, I am certain that most of these cases, which I referred to in my lectures on this operation last season, would have been brought before you now as illustrations of

amputation at the knee. Before I commenced excision, I had amputated frequently at this part, and with the most gratifying results. One case I have recorded, in my book on Surgery, of a man who walked ninety miles in three days on such a stump, and here it is (Fig. 8); and from all I have seen and known of this operation, I am greatly astonished that it has been performed so rarely. No doubt excision turned attention in another direction. But it might be asked: Why have those who object to excision, who have adhered to the old slashing system of amputation, not taken to this? I imagine that the ulcers, the sinuses, the abscesses, the disorganized synovial membranes, have all deterred surgeons as much from amputation in such questionable ground, as it has deterred them from excision. Yet, in excision how worthless have such objections been proved! and have we not similar experience of amputation at the ankle-joint, with disease in that articulation, and the soft tissues around? for here (Fig. 9) is a condition in which that operation is quite legitimate, and here is the result after the lapse of a few months (Fig. 10).

In this operation, I am not aware that any teacher has, more than myself, so strenuously drawn attention to one peculiar feature, wherein it differs so much and so importantly from ordinary amputations in the limbs. In the fore-arm or arm, the leg or thigh, the coverings to form the stump are invariably shaped from the soft parts in these regions. But in amputation at the knee, the covering to the end of the femur, that which is to form so important a part of the stump is preserved from the leg—a piece of surgery which I consider supremely conservative. Supposing that excision of the knee should yet be abandoned, why should not this operation take the place of the larger mutilation six or nine inches higher up?

When the condyles of the femur are sawn off in this operation, Mr. Syme has stated his opinion, that there is greater risk of serious inflammation in the broad cancellated surface of the bone, than when it is exposed higher up in the ordinary operation. But whilst admitting some such cases, there is no positive proof, from numbers, of the correctness of this view, and it is quite contradicted by the successful practice of that gentleman in amputation at the ankle-joint (where a broad surface of tibia is almost always exposed by the saw), as also by the usual good results of excision. Moreover, no such evil seems to have occurred in the numerous examples recorded by Mr. Carden. But in some of these cases the cancelli need not be exposed at all. The condyles and articular cartilage being healthy, may be left. And here I cannot, as a zealous surgeon, but express my thanks and admiration to Mr. Lane for having displayed what an admirable stump may be made, in some instances,

by reserving the condyles and cartilages untouched, and covering them with a flap of skin merely from the front of the leg. Previously, in as far as I am aware, most operators had reserved a covering for the end of the femur from the calf of the leg, as represented in this sketch (Fig 11); but few had ventured to take the calf away and leave only a flap of skin. This, however, is an important feature in Mr. Carden's practice. Here (Fig. 12) is his own outline of the operation; and Fig. 13 shows the recently dressed stump, with the cut surfaces in approximation.

It remains to be seen, whether such a thin covering or fleshy substance of the calf, will prove the best stump. It will also be an interesting matter for future observation whether a stump, with the entire femur, or one with the condyles sawn off, will be the best. No doubt, if this operation comes much into use, there will be a necessity in the majority of instances to remove the condyles; but if it were proved that a stump with the condyles is better, it would be the duty of the surgeon to preserve them on all proper occasions. I am not prepared to give a decisive opinion on such interesting and important points, but a minute's demonstration is worth an hour's lecture on such subjects; and here (Fig. 14) I have the pleasure of showing the cast of the stump formed by Mr. Lane in the way referred to, and another from my own cases, of a like kind, excepting that the patella had not been preserved, as in Mr. Lane's case, but in both of which, the condyles and articular surfaces were preserved. Fig. 8 shows where the condyles were removed, and the covering of the stump was made from the calf; and here is another from the practice of Mr. Henry Smith, of King's College.

As a strong indication of how this operation is estimated by some of the active spirits of the day, I may refer to the opinions of Mr. Butcher, of Dublin, who, in his recent work on "Operative and Conservative Surgery," speaks of it with all that enthusiasm which characterizes the writings of that very able and enterprising surgeon.

Lastly, as one of the greatest improvements in modern surgery, let me refer to amputation at the ankle-joint.

It is now about a quarter of a century, since Mr. Syme proposed a method of removing a diseased or damaged foot at the ankle, different in all respects from any previous proceeding. His idea was to preserve the ordinary tissue, covering the lower surface of the os calcis, so that it might be brought up against the end of the tibia, and leave a pad almost equal to the normal substance, whereby a stump, such as is here represented in Fig. 15, might be retained superior to any that could be procured from the leg, or from any of those flaps which had previously been proposed from the sides or

surroundings of the ankle-joint. At this date it is hardly needful to show how this operation has taken with the profession. Like many others in surgery, it has its faults; but, take it with evil and good, I know of no amputation—no style or kind of amputation—which deserves more high consideration. There is everything associated with it to lead to perfection, in our modern estimation of such a proceeding; a long stump, and a perfect covering to the end; a covering more perfect than that of any other stump; for the reason that the very bit of soft material, on which we naturally stand, is still preserved for the future basis of this support. Stumps in the upper extremity are put to little trial or strain, as compared with those in the lower; for these are always looked to as supporters of the weight of the body. The soft tissue, under the os calcis, is the only part of the lower extremity which has been designed by Nature for this purpose; and, with a happy idea, Mr. Syme proposed to reserve this tissue.

The general success of this operation, has been highly satisfactory. Evils have followed in various instances; and in what operation, I may ask, do they not? As a whole, looking to the small part of the body necessarily removed, the great length of limb preserved, and the natural character of the end of this stump, I most cordially express my opinion, that this is the greatest addition to amputation in modern times.

In saying this, I do not overlook the proposal of Pirogoff to retain the end of the os calcis. This (Fig. 10) is a good illustration. I consider the operation of the Russian surgeon, a decided improvement on that of Mr. Syme. Yet it is, in my opinion, only a modification, which, even should it ultimately be allowed, by all, to be an improvement, by no means detracts from the merit of Mr. Syme for reserving a flap from the sole of the foot. The idea—one of the happiest in modern amputation—corresponds with that which I have insisted on as an important feature in amputation of the leg, where a flap or covering for the stump of the thigh is preserved from the leg.

It is not so much my object at present, to compare one operation with another, as to mark the modern development of surgery; and if I am not mistaken, this operation may, in regard to amputations, be considered as far ahead of any other in this department, and I therefore refer to it specially, as one which pleasingly characterizes the progress of surgery in the present century.—*Lancet*.

ART. II.—HEALING OF GUN-SHOT WOUNDS BY FIRST INTENTION.
By MIDDLETON MICHEL, Surgeon, P. A. C. S.

The past three years' experience of the ravages of the minie ball, in its destructive ploughing up of the textures, while inflicting its characteristic wound, suggests the inquiry whether such lesion can ever possibly heal by first intention.

The contingent circumstances, which could permit the transit of the conical ball, in such a manner, through the several planes of different surfaces and fibres, of all the structures, as simply to separate or divide, rather than contuse or lacerate them, would imply a series of coincidences, so remarkable in themselves; as would appear to render such an occurrence wholly improbable. The very announcement that a gun-shot wound, which we know must suppurate, should fall into appositions throughout its continuity, pour out plastic lymph spontaneously, assuming organization, and re-establish union, appears to subvert the best ascertained and most reliable dogmas in the science of surgery; yet, we are prepared to state, that notwithstanding the difficulties of the question and the insufficiency of many attempts at a reasonable explanation, such a wound may present the phenomenon of spontaneous cure: that is, without suppurating, at most, exhaling only from its surface that amount of formative product interposed to bring the surfaces into more speedy coherence.

That small size round shot, or even the round ball, should penetrate a part, dissect up the textures, and produce no greater disturbance than is looked for from the puncture of a sharp instrument, is a matter of no great wonder. All the old writers, Hunter among them, furnish occasional instances of immediate reünion in superficial injuries by the round ball. More modern authorities, such as Larrey and Sanson, Vidal de Cassis, and others, have absolutely seen the joints transfixed, and though clearly opened, the case progress with rapidity and little inconvenience to a perfect cure; but that the conical ball should deport itself sometimes in the same way, we are ready to confess we were not willing to admit, until a broad reference to the Surgeons of the Confederate Army, supplied us with results of an experience too significant to omit mention in detail.

Surgeon A. M. Fauntleroy, Medical Director of the department of North Carolina, has communicated to us the case of a private of the 8th Louisiana regiment, who was shot by the accidental discharge of a companion's gun, (rifle-minie). The ball entered the inside of the left foot, coursing the arch of the instep, coming

out at a point opposite its entrance. Suppuration never occurred, and the wound healed by first intention. At the battle of Drainsville, 1862, Surgeon E. S. Gaillard, Medical Director, had under his notice a private, whose gastrocnemius muscle was perforated by a minie ball, yet this wound recovered without suppuration. Surgeon W. S. Mitchell, Chief Surgeon of Rodes' division, informs me, that Lieutenant E., of the 12th Georgia regiment, was wounded by a minie ball, which entered about half an inch above the dorsum of the penis, to the right of the middle line, making its exit on the outer and posterior portion of the right buttock. There was no suppuration. The Lieutenant was never confined to bed, and the orifice of exit was entirely closed by the third day. The orifice of entrance closed almost immediately by scab, which remained six or eight days.

Surgeon J. B. Read gives me the case of Lieutenant N. R., of the 10th Virginia cavalry, wounded June 20th, 1863, at the cavalry battle of Brandy Station. A minie ball entered the six intercostal space, on right side, making its exit at fourth intercostal space of the same side, three-quarters of an inch externally to the nipple. Expectoration of blood, and escape of some bubbles of air were observed, but all of this disappeared by the 30th June. No suppuration occurred, and at this period, after the injury, no scabs existed on either wound. Auscultation revealed a perfectly healthy lung.

There seems to be some common features of resemblance between the instances above recorded, deserving of notice, as perhaps indicating the conditions most favorable towards such results. These are—the superficial nature of the injuries, the obliquity, and perhaps, valvular character of the wounds, and the short range of fire, at least in two of the cases, the ball entering very soon after its discharge from the piece, with its initial velocity, which we know is the maximum velocity of a ball. In one instance, the missile follows the convexity of the instep, in the second case, notwithstanding the diversity of sentiment as to its passage through the abdomen, there is little doubt of its having coursed along the walls of that cavity, and in the chest wound, as sometimes happens, the ball passed, in all probability, between the lung and the walls of the thorax, without seriously wounding the pleura, and certainly not the lung, since careful auscultation disclosed not the slightest impairment in the functions of that organ. Nor will it be argued, that the expectoration of blood, or even escape of air, are indications to the contrary, since these phenomena are not unequivocal evidences of lesion of this organ.

But what is far more remarkable in this connection, we have still

to record an equally favorable termination, where more serious injury has been inflicted, involving deeper-seated organs, and complicated with fracture. Assistant Surgeon McQueen, of Daniel's brigade, reports, that after the battle of Chancellorsville, among the wounded remaining in his charge at the Lacey House, was a man, who presented a compound comminuted fracture of the upper-third of the femur, from a minie ball, and the wound healed in less than one week, without suppuration. Surgeon H. F. Campbell furnishes me the history of Lieut. Colonel —, who was wounded through both thighs. The left thigh was fractured; the right presented a simple flesh wound. While the former underwent the reparation incident upon such an accident, suppurating abundantly, the flesh wound, though a deep one, healed promptly, without any discharge, the patient himself, manifesting some concern at the circumstance, under the impression, very common among the uninitiated, that his wound could not be doing well, since it did not discharge pus like the other.

The following cases, though open to the objection of not having been under the continued supervision of the surgeons, who relate them, from the commencement, are deeply interesting as exhibiting those powers, founded in the autocracy of nature, even in the presence of the gravest accidents of battle. Surgeon Read reports, that Lieut. S—, of the 3d Georgia regiment, was wounded July 23d, 1863, at Manassas Gap, by a minie ball, which traversed both thighs just above the knees, lodging on the outer side of the right knee. The patient was in the act of stepping forward at the time. He lay four weeks without surgical treatment, with one thigh fractured; and, after sixty miles transportation in a wagon, reached the railroad, which brought him to Richmond. On entering the hospital, under the able care of Surgeon Read, his wounds were found covered by dry scabs, and being a physician himself, he gives the assurance that there had been no suppuration. At the expiration of four weeks he had used crutches. There was consolidation, with one and a quarter inches of shortening on right side.

We are also indebted to Surgeon C. J. Clarke, of the Alabama Hospital, for the next: J. S., of the 13th Alabama regiment, at the battle of Chancellorsville, May 3d, 1863, was wounded through upper third of the thigh, ball entering six inches below the anterior superior spinous process of the ilium. He entered Dr. Clarke's hospital the 23d May. Neither the ball nor any fragments of bone had been removed; there had been no purulent discharge from the wound. The wound, at the time of his arrival, was completely healed; his limb was, however, placed on a double-inclined plane, with suspensory slings; no suppuration occurred

during his stay in the hospital. He made a good recovery, with a limb shortened two inches.

The above cases are supported by all the evidence necessary fully to substantiate them, and their importance in a medico-legal aspect, is evident to all.

The great danger dependent upon a compound comminuted fracture, accompanied by all the commotion or destruction of the soft parts, which may be conceived to exist, is inflammation and its products; and experience teaches that the introduction of air into such a wound is, above all other causes, that most fraught with pernicious consequences; for it is such an accident that inevitably gives rise to high inflammatory action, and this, in its turn, to the production of pus, which interrupts, suspends, and inevitably postpones reünion. A more or less prompt healing by first intention, under similar breaches of continuity, when the superjacent integuments are uninjured, is of daily occurrence; and a comminuted fracture, with loss of substance, and such displacement of its fragments, as to produce considerable shortening of a limb, with laceration of the soft parts, injury of the periosteum, destruction of the muscles, their sheaths and surrounding cellular tissue, will often become repaired, without the development of suppuration, if the introduction of air has been prevented. The extravasation of blood and exudants of a viscid and gelatinous consistency, are very soon transformed into the provisional and definitive callus and callulofibroid structures, which bridge the entire track of the injury, without evolution of the morbid products of inflammation. Therefore, it may be possible, in certain exceptional and very rare conditions of a gun-shot wound, in which the orifices, from their obliquity or valvular state, perfectly exclude the ingress of air, that it should find itself placed in no dissimilar condition from an ordinary comminuted fracture. The mere possibility of such an event is certainly exhibited in the illustrations above noted, while the extreme rarity of the occurrence is equally shown, by the very few cases we have been able to obtain, from an army scattered over so large a part of the Confederacy, and after all the many hostile encounters in which it has been engaged.

From the relations, in which we have sometimes found the walls of the bullet track, in certain portions of their extent—that of nearly complete apposition, and in a short time of partial coherence—we must refer these examples of immediate adhesion to accidental coincidences, in the special direction taken by the missile through the organs of the body, consorted, fortunately with its maximum velocity. To these physical conditions, so naturally and obviously interdicting the entrance of air, rather than to any peculiar consti-

tutional healthiness on the part of the subject, would I refer so unexpected and favorable an issue. With these cases before us, then we must conclude, that long as the contrary opinion has been entertained, it is now beyond doubt, that even deep-seated lesions of the character we have been examining, do occasionally heal by first intention.

Connate to this question is the similar inquiry, whether this kind of union be more common, where the injury affects the appearance of an incised wound.

That gun-shot wounds may assume such an aspect, when caused by the round ball, was known to Guthrie; and I have, myself, recently corroborated the statements of others, that the same effects may take place when the minie ball is the wounding agent.

M. Derigan, attached to the naval brigade before Sebastopol, noted the irregularity of the edges of some of these wounds, and mentions instances in which the minie ball caused as clean a wound as if done by a sharp knife; the nose, in one instance, having been divided at the junction of the cartilages with the bones; the lower portion dropping down, but adhering by a good pedicle, and healing when brought together, as in hare-lip. While recently among the wounded on the fields of Spottsylvania and the Wilderness, I met three examples of perfect incised wounds, produced by the conical ball, possibly at short range, as they occurred during the attack upon our breastworks. All of these were about the head and face. Pieces of shell, fragments of foreign bodies, such as solid parts of the soldier's equipments, and bone itself, from the fractured limb of a fellow-comrade, have been found to inflict wounds closely resembling incisions, but the minie ball also, as we have observed, may occasion such results when unchanged in shape during its flight, by striking at a considerable angle of incidence, upon a broad and flat bone immediately subcutaneous, or over which the superjacent integument is tensely drawn; or where, again, it reaches some reduplication or fold of very lax skin, such as obtains in the neighborhood of joints on the surface of either flexion or of extension, when the ball forces the integument into a cul-de-sac, producing a rent which, owing to the elasticity of the texture, appears even smaller than the object which has caused it. Such linear wounds have been far more frequent about the head, than elsewhere, and exist, as such, only by conditional location, for we have repeatedly remarked in civil practice, similar effects under the agency of varied forms of wounding bodies, when occurring about the scalp.

It has been questioned whether the edges of such wounds, more or less contused as they are found to be on nearer inspection, are

any more suitable for primary adhesion. They unite, it is presumed at least, in part of their extent, when brought in regular contact, and this is all that the experience of many teaches; but from what I have seen of these wounds, I am disposed to hope for more frequent success, when they are properly adjusted, and in perfect apposition. From the worse looking lacerated wounds, I have sometimes obtained excellent results, and in one of the three cases stated as occurring on the battle-field, the wound healed throughout its entire extent, by first intention. This was a private of company "G," 3rd South Carolina regiment, wounded through the face. One of the wounds presented so regular an incision through cheek and lip, that Surgeon J. Evans, who kindly exhibited it to me, brought down the flap and united its edges with sutures, and adhesion supervened promptly and so perfectly, that a linear cicatrix will, perhaps, be all that will hereafter indicate the accident.

The rapid closure of such wounds, and exclusion of air when practicable, secures this mode of healing, even in gun-shot wounds. Great stress should, therefore, be laid upon whatever means are within our reach, in injuries about the head and face. Where the integument is loosely adherent, and we can operate by *glissement*, the edges may be scarified, if not found in the accidentally incised state alluded to, and be brought together with sutures.

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CLINICAL LECTURES.

CLINICAL NOTES OF CASES TREATED AT THE LATE U. S. MILITARY HOSPITAL, CHARLOTTESVILLE, VA. From Prof. J. L. CABELL, M. D., University Va.—[From Hospital Case-Book.]

CASE 1.—*I. P. L., Private, 24th Va. Reg't., Co. A.*—Entered the hospital September 14th, 1861, with typhoid fever; not, however, a marked case. He suffered little or none, in any way, except with pain, more or less, constant in the bowels. The tongue was slightly furred, white, and not unusually red. For the pain, a blister was applied over the abdomen, and turpentine administered internally for a few days, then elix. vitriol on account of night sweats. In the meantime, the blister began to slough, and the pulse diminished, *pari passu*, with the sloughing. Intense pain attended the dressing of the blister, for which morphine was given internally, before each dressing. The diet was generous, until nausea supervened, and then it was necessarily reduced to milk

and arrow root, frequently given. Stimulants were not tolerated.

No record of the case was kept until Oct. 9th, 10 A. M. Found disposed to sleep, the effect of opium; blister still very painful; slough disposed to separate; it includes the whole thickness of integument across the abdomen, average with three to five inches. Skin warm and moist, forehead wrinkled vertically. Tongue furred thinly; white at the edges, in centre dry and red. Bowels tympanitic. Borborygmus and a good deal of pain. Nausea, and sometimes vomiting, when anything is taken into the stomach. No appetite. Pulse only 56, soft; considerable thirst; urine red and scanty. He complains of numbness of the arms, and unless under the influence of an opiate, very restless. Directed the blister to be dressed with simple cerate for the present. To take mur. tinct. ferri. 15 drops, three times daily. Morphine *pro re nata*. Diet: milk and arrow root, as much as he will take.

October 9th, evening.—Found patient suffering with his blister, which has just been dressed with disinfecting powder and simple cerate cloth. Countenance anxious; pulse 56; breathing good; tongue moist, and disposed to clean; nausea not quite so distressing as in the morning; arms still numb. Had burning pain in his left leg, for five minutes in the day, which he could not account for. Medicines and diet continued as before. He was shortly afterwards seen by Dr. J. S. Davis, who suggested that possibly the sickness at the stomach was occasioned by the often repeated doses of morphia or opium. The nurse was accordingly directed not to give any more, during the night, unless the pain became so severe as to require it.

October 10th, 9½, A. M.—Patient drowsy, had no sleep during the night, on account of nausea and vomiting, which occurred several times. He took an opium pill, 1 gr., which relieved him for a time, and caused him to sleep a little, but it was not refreshing. The aspect of patient is better; little or no anxiety of countenance; skin cool and moist; pulse 48; respiration 18, and easy; tongue a little dry, less red, and cleaning. He complains less of nausea, and feels more like eating. Asked for a cracker with tea. Bowels uneasy, no operation for several days, for which an enema of warm water was directed to be given, some time during the day. Has a good deal of thirst. The blister is very sore, but he has no pain unless he moves; the slough is separating, and the discharge very foetid and profuse. Directed to continue medicine and diet as before, to omit taking morphine, unless the pain should become severe. The blister is to be dressed, as before, with a disinfecting powder made with gypsum and coal tar, and covered with simple cerate cloth.

12 M.—Sent for to see the patient, but before I reached him he was dead. He had been raised up, and placed upon the night-stool, had an operation on the bowels, and when placed in bed, complained of being very sick at the stomach; this was immediately followed by an epileptic convulsion, which terminated, in less than five minutes, in death.

This is the second death occurring in the house wards, during the last three days, from sloughing of blisters. In both cases, the patients were apparently doing well, the sloughs were separating, and granulations were forming in the exposed portions. In both cases, the pulse became remarkably slow—in one, 48 in the other, 56—and both died (after sitting on the night-stool) unexpectedly, in a few minutes, and in an epileptic condition.

CASE 2.—*J. P., Private, 7th Va. Reg't., Co. G, aged 22, Farmer.*—Wounded August 30th, 1862. Ball entered half an inch below right clavicle, at its middle, passed between first and second ribs, fracturing first rib, and lodging between the pleura pulmonalis and pleura costalis, over apex of upper lobe of lung.

Wound dilated half an inch to outer side, and the attempted removal of the ball failed, from the obstruction offered to its passage by the ribs. Incision above clavicle (as for ligation of subclavian artery) and this opened through to track of wound, anterior to pulmonary cavity, and through intercostal muscle slightly, into cavity. Space between ribs insufficient for removal of ball, and operation discontinued.

Spat blood, when wounded, for a day or two, followed by no cough or unpleasant pulmonary symptoms. General health good. Suppuration has been continuous, up to the present time. Three months ago, ball was distinguished at a depth of three and a half inches. Ten days ago, a piece of oil-cloth, one inch square, was removed, and in a few days afterwards, ball was distinguished at a depth of two inches. It was uncertain whether the artery and vein were on the inner or outer side of the track of the wound, and the probability of their passing just over the first rib, where resection would have to be performed, postponed any farther operation in that direction.

August 11.—P. 84; constant nausea; passed a restless night; much thirst, and vomits everything taken on the stomach. *Rx.* Sulph. Morphine, gr. 1-4; Sub. Nit. Bismuth, grs. ij., every two hours. 12th.—P. 86; skin moist; tongue coated slightly; less nausea; vomited once since yesterday evening; some fulness and unpleasant sensations in upper portion of lung and chest, but no pulmonary complications; no stool. *Rx.* Treatment continued, and enema of warm salt water, $\mathfrak{z}$ vj., given. 13th.—P. 92; hard,

bounding ; tongue cleaning ; slept well ; relieved from nausea, since yeasterday morning ; no inflammation of lung ; discharge offensive from wound ; incision healing, by first intention. Treatment continued ; chlorated sola diluted applied to wound. 14th.—P. 88 ; hard ; slept well ; no nausea ; appetite returning ; pus discharging more freely from wound, and incisions slightly inflamed, around its margins ; no pulmonary symptoms. Treatment continued. 15th.—P. 90 ; slept badly last night ; tongue coated with white fur ; incision more inflamed and sutures removed, with gaping at one extremity ; suppurating freely and less foetor about it. 18th.—P. 102 ; tongue still slightly coated ; one stool ; skin more natural ; nausea continues, with free suppuration from incision and less from wound. Treatment continued. 19th.—P. 180 ; quick and fuller ; suffering from nausea and colica ; wound not so painful. *R.* Sulph. Morph. gr. $\frac{1}{4}$; Sub. Nit. Bismuth, grs. ij., every hour ; mustard poultice to abdomen. 20th.—P. 116 ; skin soft ; tongue furred ; three stools ; feels much debilitated, with much soreness through abdomen ; slept comfortably ; free from pain ; anorexia and thirst. Continue treatment. 21st.—P. 124 ; skin soft ; respiration quick ; four stools ; anorexia ; tympanitic over abdomen ; dry cups applied over chest and abdomen, gave some relief, and produced profuse perspiration. 22d.—P. 130 ; skin moist ; perspired all night ; tongue coated ; two stools ; quite weak ; better appetite and breathing easier. *R.* Calomel gr. j., Opium gr. j., ft. pilulæ viij., one every hour. 23d.—P. 118 ; skin moist ; two stools ; lower lobe of right lung congested ; three dry cups applied, and elixir vitriol gtt. x, Sulph. Quinine grs. ij., given thrice daily. 24th.—P. 128 ; skin moist and hands cool ; no stool ; appetite better ; quite nervous from effects of morphine taken last night to produce sleep. Elixir Vitriol, 3 ij., Quinine, grs. xij., Aqua., 3 vj., 3 ss., three times a day, and whiskey 3 ss., every four hours. 25th.—P. 134 ; free perspiration ; three stools ; slightly tympanitic, with slight fur over tongue ; less subsultus tendinum ; took, last night, Opium grs. iv., Camphor grs. viij., ft. 4 pilulæ, 1 every hour, without producing sound sleep, but feels better this morning, and *R.* Car. Ammonia 3 j., Camphor 3 j., Tinct. Opii 3 j., Mucilage 3 vj., 3 ss., tertia hora. 26th.—P. 124 ; perspiration not so free ; rested badly ; nausea from medicine ; Opium grs. ij., Camphor grs. v., taken last night, in two pills ; one stool ; slight inflammation in upper lobe of right lung. *R.* Carb. Ammonia grs. v., in solution, every three hours. 27th.—P. 120 ; slept better ; less subsultus tendinum ; applied last evening a blister, 6x3, from sternum to umbilicus, and Opium gr. j., Camphor grs. ij., Acet. Lead gr. ij., given ; tongue moist ; slight appetite ; thirst constant ; Morphine gr. ss., applied to raw surface of blister. 28th.

P. 112; soft and compressible; slept better last night; Morphia gr. ss., applied to raw surface of blister; still starting in sleep; less subsultus tendinum; tongue moist; one stool; appetite improved. R. Opium gr. ss., Camphor gr. ij., every two hours. 29th.—P. 116; skin soft dry and warm; tongue moist; one stool; blister drying up; wakeful during night; some subsultus yet; appetite improving. R. Opium gr. ss., Nit. Silver gr. 1-4, Asafoetida grs. iij., every four hours. 30th.—P. 104; soft, full; slept tolerably; tongue moist; slightly fissured; no tenderness over abdomen; two stools; less subsultus tendinum; appetite improving; treatment continued. 31st.—P. 108; tongue moist and fissures disappearing; slept tolerably; one stool; no tympanitis; less subsultus tendinum; condition of wound healthy; treatment continued.

September 1st.—P. 105; tongue moist; no stool; rested well; almost free from subsultus; appetite improving wounds healing by granulations. 2d.—P. 120; skin dry and warm; rested badly; tongue moist; no stool; some pain in left lung, but no local inflammation; treatment continued. 3d.—P. 120; skin soft and moist; tongue moist; no stool; urine very high coloured; treatment continued, and R. Bi. Carb. Potass. grs. x, tertia hora in 3 ij., aqua. 4th.—P. 108; tongue moist; no stool; appetite improving. 5th.—P. 110; tongue moist; bowels regular; appetite improving; continue Bi. Carb. Potass. grs. v., every tertia hora. 6th.—P. 108; tongue moist; no stool; rested well, and general condition improving. 7th.—Pulse 116; slight cough; respiration harsh in upper lobes of both lungs; tongue moist; one stool; appetite improving. 8th.—P. 110; skin soft and moist; cough slightly troublesome; cough mixture every three hours. 9th.—P. 120; skin relaxed; tongue moist; one stool; incision granulating and healing from bottom, and all discharge from old opening of wound; treatment continued. 10th.—P. 116; tongue moist; three stools; slept well. R. Veratrium Viride gtts. v., every three hours. 11th.—P. 118; tongue moist; rested badly; two stools; no tympanitis. 12th.—P. 114; tongue moist; three stools; rested well. 13th.—P. 116; skin soft and moist; one stool; tongue coated; no nausea, and appetite tolerable. 14th.—P. 112; tongue moist; three stools; urine free. 15th.—P. 118; tongue moist; two stools; slight cough. 16th.—P. 118; tongue moist; one stool; skin soft and natural; less relaxation and perspiration. 17th.—P. 124; tongue moist; four stools; appetite improving. 18th.—P. 125; three stools; skin warm. 19th.—P. 128; tongue moist; no tenderness in abdomen; two stools; incision cicatrizing; discharge from wound continues; ball perceptible at depth of three inches. 20th.—P. 122; tongue moist; one stool; relieved from nausea; urine free. 21st.—

P. 122; tongue moist; skin soft and warm; bowels regular. 22d. P. 120; tongue moist; skin soft; one stool; rests well. 23d.—Condition unchanged. 24th.—P. 120; skin warm; one stool; rested well; appetite improving. 25th.—P. 118; tongue moist; four stools; little blood; no tenderness. 26th.—P. 118; skin moist; tongue cleaning and moist; two stools; urine free, light coloured. 27th.—P. 114; skin warm; three stools; urine free, high coloured. 28th.—P. 120; tongue moist; one stool; respiration free and easy in both lungs. 29th.—P. 102; tongue moist; two stools; improving generally. 30th.—P. 100; skin soft, natural; two stools; incisions cicatrized, and gun-shot wounds suppurating less.

October 1st.—P. 106; appetite good; slight improvement in strength. 2d.—P. 120; skin soft, natural; wound still suppurating thin pus; breathing easy; slight cough. 3d.—Condition unchanged. 4th.—P. 98; full, strong; bowels checked; good appetite; able to sit up a short time. 5th.—P. 102; skin soft; condition improving. 6th.—Condition unchanged. 8th.—P. 90; full, strong; headache; one stool; good appetite. 9th.—Sitting up regularly for an hour at a time; slight increase of strength. 10th.—Condition improving. 11th.—Improving. 12th.—Condition the same. 14th.—Taken cold; cough troublesome; expectoration free; mucous rale through entire lung. 15th.—Condition unchanged. 20th.—Cough very troublesome; expectoration profuse. 21st.—Cough very troublesome. 22d.—P. soft; appetite good; bowels regular; no night sweats; perspires freely while coughing; cough is very troublesome. 23d.—P. 100; skin soft, rather warm; cough very troublesome; still expectorates very freely; discharge from wound much freer since late change. 24th.—Continues the same; able to sit up and walk about the room. 25th.—Condition unchanged. 27th.—Constant cough at night; free expectoration; slight cavernous sound in upper lobe right lung; free discharge from wound; bowels regular; appetite fair; strength less than a week ago. 28th.—Condition unchanged. 30th.—Cough less frequent and expectoration diminished in quantity; discharge from wound also less; slept well; has no night sweats; slight improvement in strength within past two days. 31st.—Slight improvement.

November 1st.—No change. 2d.—Improving; able to walk out of house. 3d.—Improving. 5th.—Furloughed November 4th. Has improved very much in last few days; much less cough; appetite better; able to walk out of house; wound still discharging. Bellows murmur less audible in apex of right lung, though still has some pain in that side. No night sweats. Bowels regular and digestion good; with a good prospect of still further improvement in health.

ORIGINAL CORRESPONDENCE.

LONDON, March, 1866.

The question of the advisability of treating patients with contagious diseases, in general or special hospitals, is one of great importance, and though it has been discussed here, to a considerable extent, it cannot be regarded as finally settled.

Cases of small-pox, indeed, are not admitted to our general hospitals; being either treated at home, or sent to the small-pox hospital. Typhus, typhoid, and even scarlatina cases are, however, dispersed through the wards of our general hospitals, to a great extent, though very many cases are treated at the London Fever Hospital. The epidemic of typhus, in London, in the year 1862, afforded useful evidence on the subject. Dr. Marchison, Physician to the London Fever Hospital, has adduced statistics to prove, that the danger of contagion, is not so great in an institution of that kind, as in a general hospital. He stated that 1,080 cases of typhus, admitted into the London Fever Hospital, communicated the disease to 27, of whom 8 died; i. e., there was one case of contagion for 40 admissions. From returns furnished by six general hospitals, he learnt that 272 cases, admitted, communicated the disease to 71, of whom, 21 died; i. e., there was one case of contagion for four admissions. This comparison is, however, scarcely a fair one, since the London Fever Hospital, a modern, airy and well ventilated building, is compared with six other hospitals, differing much from each other in these points. And the statistics, themselves, show a wide discrepancy between the different general hospitals. Thus, one hospital has 21 cases of contagion for 40 admissions, while another has only 12 cases of contagion, for 92 admissions. And I know, from personal observation, in regard to the last mentioned hospital, that the cases of contagion were nearly all in the old and badly constructed wards, while in the modern part of the building, where the wards are lofty, spacious, and well ventilated, not a single patient, and I believe only one nurse, contracted the disease from typhus patients admitted. The question is, therefore, not so easily decided as might appear at first sight, and other Physicians, who have studied the subject, (and especially Dr. Bristowe, who has made extensive observations on hospitals throughout the United Kingdom,) are of opinion that there is less risk of contagion, when the fever patients are scattered here and there, over the wards of a general hospital, than when they are brought together into special wards, and the fever poison concentrated.

Cases of strangulated hernia, are among the most important sub-

jects for operation in the London hospitals, and, at the same time, among the most unsatisfactory, since the patients often do not apply for treatment, until the operation is almost useless, and the mortality is consequently very great. Perhaps, some of your readers may be interested in the following brief notes of two cases, where gangrene had set in, and an artificial anus resulted.

CASE 1.—A man, æt. 37, admitted with scrotal hernia on the right side, which had been down two days, with symptoms of strangulation throughout. A truss had been worn for two years, and was on, when the rupture last came down. The tumour appeared to contain fluid below, was hard in the middle, and tympanitic above, near the external ring. The sac was opened, and found to contain foetid fluid. The seat of stricture was at the external ring. The knuckle of small intestine, which was in the sac, was so dark and dull in colour, that it was only after some consideration, that it was returned into the abdomen, and that it was carefully left with the doubtful part lying against the edges of the wound. For the next three days, it was found necessary, from the evidence of peritonitis, to administer large doses of opium; amounting on the second day, altogether, to nine grains of solid opium—four grains on the third day, and five on the fourth day, one grain daily being given for the six following days. On the 7th day, after the operation, fluid *feces* passed by the wound, and there was much constitutional disturbance. Faecal matter continued to flow, though in decreasing quantity, till about the 33d day, when the wound closed; but several times after, particularly after taking more solid food, or taking too large a quantity, the wound reopened. It did not, however, remain open long at a time. Diarrhoea was a troublesome complication, but still more threatening was the extreme emaciation, probably due to the opening being situated high up in the small intestine. He was about two months in hospital, and when discharged, the wound was healed, and he was able to walk comfortably, though still weak. He reappeared, after some months, looking very healthy, unable, however, to undertake any arduous labour.

CASE 2.—A woman, æt. 49, admitted with a painful, hard tumour in the right groin. There had been a reducible hernia on this side for years, but for the last fourteen days, it had been down, and increasing in size. Constitutional symptoms, however, had not appeared till four days before admission, and then had not been severe. The pulse was 80, small; tongue brown and dry; bowels not open for four days. When the sac was opened, faecal matter and pus escaped, and the intestine was discovered to be very congested and dark coloured, with a patch of gangrene, the size of a florin, perforated. The stricture was divided freely, and the intestine left

in the wound, it being firmly adherent to the neck of the sac. Some relief followed, but faecal vomiting recurred at intervals, and some obstruction to the faecal flow being suspected, the wound was enlarged on the 13th day. This was followed by temporary relief, but sickness again recurred, and the patient was much emaciated. Three days after, a tense and tender tumour appeared in the left groin. This was carefully incised, and was found to be a suppurating sac, but it contained no intestine. Sickness now ceased, but she sank and died, nineteen days after admission. The main treatment in this case was by opium, of which she took three grains on the 2d day, one and a half on the 3rd day, three on the 4th, and five and a half on the 5th. It was then discontinued, but resumed in small doses when the sickness and abdominal pain set in so persistently.

The post mortem examination showed the intestines adherent to both iliac regions by recent lymph. In the left was a collection of pus, shut off from the rest of the peritoneal cavity, by new adhesions. The sac on this side contained no intestine, and its neck was partly closed by omentum. On the right side, there were two distinct, but contiguous openings of intestine into the sac, apparently, owing to the loss of a complete loop of intestine by sloughing. The upper opening was small and obliquely placed, while that of the lower portion was larger and more direct. Above the destroyed portion, which was in the upper part of the ileum, the bowel was swollen and congested, and containing brownish faecal fluid. Below this, the ileum was pale and empty. All the other viscera were healthy, except the kidneys, which were in an early stage of granular degeneration.

In this last case, the opening was high up in the small intestine, and the sloughing very extensive, so that no faecal matter passed on into the large intestine. The exhaustion produced by this, would probably have prevented a favourable result, even if death had not been hastened by the extension of inflammation to the peritoneum and to the old hernial sac on the left side. In the case of the man, on the other hand, the gangrene was no doubt much less extensive, so that the intestine became adherent to the neck of the sac, and recovered its peristaltic action.

An interesting case of lithotrity was recently brought before the Medico-Chirurgical Society, by Mr. Henry Thompson, who is well known as a successful crusher of calculi; and particularly, as having successfully performed the operation on His Majesty, the late King of the Belgians. The calculus, in the present case, was phosphatic, occurring in a man, aged 40. Four days after it was crushed, a fragment of bone became impacted in the urethra, and

was removed by forceps, and other small pieces of bone followed. The patient was cured. It was ascertained that he had had severe pain in the right hip, 17 years ago, and was lame for more than a year, an abscess then bursting externally. He had another attack, three or four years after, with much pain, lameness and abscesses; and a third attack, two years ago, without external abscess, but followed immediately by urinary symptoms. This history was considered to show that there had been necrosis and exfoliation of a small piece of the os innominatum, which had made its way, as a sequestrum, into the bladder, and become the nucleus of the calculus. Of course, if the patient had been a female, it would have seemed probable that the bone had been introduced from without, but it is very unlikely that a piece of bone should have been passed into the bladder by the male urethra. In confirmation of the view taken, Mr. Solly related a case of spinal disease, in which an abscess, apparently connected with the vertebræ, appeared to have opened into the bladder, without much constitutional disturbance, and the patient recovered.

There are few inventions, which have exercised so decided an influence on the progress of special surgery, within the last century as that of the ophthalmoscope; and since it is of simple construction, and does not require any very lengthened apprenticeship to make out the appearances disclosed, it will before long become the necessary companion of every well educated, general Practitioner. For, without it, it is absolutely impossible to treat many cases of eye disease, on any sound principle. Through its use, we may hope soon to see many of those terms, which, like "glaucoma" and "amaurosis," were hardly more than screens for ignorance, either expunged from our vocabulary, or confined within definite limits, so as to be of some practical value. Unfortunately, however, while we gain clearer views of different morbid appearances, we are led at each step of differentiation to mark our progress, by the coining of a new name; and in ophthalmic science the longer this is, the more satisfactory it seems to be to the bibliographers, especially the Germans.

The most convenient ophthalmoscope, now made in England, is one on the principle of Crocius, that of a perforated reflector, and a double convex lens. The reflector is slightly concave (of 18 inch focus,) and consists of silvered glass, mounted in a brass frame, perforated in the centre for the eye of the observer. The diameter of the reflector is $1\frac{3}{4}$ inch, and with the handle, it only measures three inches in length. The lens is smaller, about $1\frac{1}{8}$ inch in diameter, with a smaller handle, and with a focal length of about two inches. These pack very conveniently into a small case, three

and a half by two and a half inches, and are sold here for nine or ten shillings.

A larger instrument is also used, which is a modification of one by Liebreich, and for clinical instruction, supersedes the smaller instrument. The principle of its action is exactly the same, the main difference consisting in its being fixed on a stand, and possessing a chin-rest for the patient, and an ivory ball for him to fix his eye steadily upon. The body of the instrument is in the form of a telescope, at one end of which, is placed the movable perforated reflector, the side of the tube being cut away, to allow of the light being thrown upon it from a small attached paraffin lamp, which is shaded from the patient's eye. At the other end of the telescope, is the convex lens, also movable. The whole is mounted on a firm stand, and can be raised or depressed at will. The great value of this instrument is, that when once the operator can get the patient to fix his eye steadily, any peculiar appearances can be demonstrated without difficulty, to a number of spectators consecutively.

The objection urged against the laryngoscope, that it cannot be used just in those cases where a sight of the parts would be of greatest value, does not apply to so great an extent in the case of the ophthalmoscope. For it is only when the transparent structures of the eye are rendered opaque, that it cannot be employed, and in these cases, we have generally sufficient visible evidence of disease, without the necessity of searching into the deeper tissues, for an explanation of the symptoms. In glaucoma, however, the same intra-ocular pressure, which, perhaps, destroys sight, more or less permanently, by bulging of the optic nerve, causes also, bulging and opacity of the cornea, and in a case of this kind, unless seen early, the ophthalmoscope will reveal nothing diagnostic. Opinions are, in fact, yet divided upon the question of the true lesions in this disease; but the majority incline to the belief, that in all cases, bulging of the optic nerve, with softening of its fibres, exists.

A very neat operation of Von Graefe's, for extraction of cataract, has lately been adopted, to a considerable extent, here. It consists in passing the ordinary cataract knife of Beer's, through the upper cornea, and then removing a large piece of the iris, (about one-fifth of its circumference). The cystitome is next used to break up the anterior capsule; and the scoop is then gently insinuated behind the lens, which is thus brought forward to the cornea, and being under control between the scoop, and the cornea is brought out at the small corneal wound. There is some danger in this operation, of injuring the vitreous humour, and also, of losing the lens in the anterior chamber; but the wound of the cornea is so much smaller than in the ordinary operation, that there is much

less chance of sloughing and protrusion, and the loss of iris is completely hidden by the upper lid.

While speaking of cataract, I may as well mention another method of treatment, lately introduced, or rather, an old method revived on improved principles. It applies only to softened cataracts. It is simply that through a small corneal wound, the nozzle of a delicate exhaustor is introduced, and the liquid contents of the capsule are withdrawn. This is merely a more accurate adaptation of an old plan of sucking the softened lens, through a small tube, by the mouth.

The operation of iridectomy, is steadily increasing in favour in this country for glaucoma, and for all those numerous cases of intraöcular pressure, which are distinguished by tension of the globe and bulging forwards of the iris. The rationale of this treatment is rather obscure, but the results appear to be undoubtedly favourable. It seems to act by taking off the strain which previously pressed, from behind, on to the iris and its ciliary attachment. The iris having before been merely a perforated screen, stretched to its full, interposed between the vitreous humour and the cornea, and sustaining nearly all the pressure a tergo, as soon as this screen is torn down, and some of the aqueous humour evacuated, pressure is taken off, to some extent, and the remaining pressure equalized, within the whole globe of the eye.

NEW ORLEANS, April, 1866.

The advent of the first number of the *Richmond Medical Journal*, was hailed by the friends of medical literature, as a harbinger of peace, and a resumption of those habits of study and cultivation, which had been suspended by the terrible and sanguinary events of the last four years.

I have nothing of especial medical interest to communicate, except the fact of the termination of the sessions of the two Schools of Medicine in our city, with a respectable number of graduates, prepared to enter upon medical practice, after reaping the advantage for clinical study, in the six hundred beds of the Charity Hospital.

It is desirable to invite the attention of Physicians and Apothecaries to a series of interesting observations, now being made by Mr. W. H. Laster, the accomplished Chemist and Apothecary of the Charity Hospital, many of which the writer has had opportunities of verifying. An idea of the labour of the pharmaceutical department may be formed from the fact, that on one day last week, upwards of five hundred prescriptions, for the wards, were dispensed by Mr. Laster and his assistants.

Most practitioners have noticed the variable character of most of the fluid extracts of the U. S. Pharmacopœia, and of their uncertainty of effect in some instances, most of them being nothing less than highly concentrated tinctures, the amount of undiluted alcohol constituting an objection to their internal use, in cases where alcohol is contraïdicated. A desideratum has been either to replace the alcohol with some other material, or to reduce greatly the amount. In most instances, the quantity of spirit may be reduced one-fourth, and yet the stability of the extract remains unimpaired.

In my wards, at the Charity Hospital, I have had frequent occasion to note, especially in chronic disease, the advantages of many of the house preparations, over some of the formulæ of the United States and the British Pharmacopœias, and such has been the experience of some of the other Physicians and Surgeons of the Hospital.

In the preparation of the fluid extract of buchu, alcohol does not extract the entire medicinal virtues. The active properties of buchu depend, first, upon a yellowish oil of a strong camphorous odour; extractive and gummy matter being the second and third substances. When the oil is extracted, as it is by alcohol, we have the stimulant, without (or in a very slight degree) the diuretic action of the buchu. The extractive and gummy matter produce less stimulant, and a decidedly diuretic action.

The medicinal activity of this substance depends upon a combination of the three named principles, and this view has been supported by practical evidence in this Hospital. I have found the infusion of buchu, prepared with *cold water*, to produce in every instance a diuretic action, and the *alcoholic extract* little or none.

Now, what is the cause of this difference of action? It is this: The extract of the present pharmacopœia, is an alcoholic solution of the oily and resinous principles, together with the chlorophylle of the plant, the last being inert; the oil is possessed of the usual stimulant action of its class, such as pepper and spearmint, with which it may be closely compared. The resinous matter has a similar action to the oil, and is the result of the action of the atmosphere upon the latter.

In the infusion, the gummy matter is dissolved, and from its quantity, thoroughly suspends the oily and resinous substances, and we thus have the entire medicinal activity of the buchu—first, the stimulant action of the oil, followed by the diuretic action of the combination.

Therefore, in preparing a fluid extract, from a substance like buchu, depending for its activity upon two or more principles, we should use a menstruum capable of extracting the whole, such as water; but there is one disadvantage attending the use of this

liquid, for in evaporating the aqueous infusion, there is great loss of the volatile oil, and at this high temperature, probably other changes occur to the remaining principles.

To avoid these effects in the preparation of the fluid extract of buchu, used in the Charity Hospital, alcohol is used to dissolve the oily and resinous matter, and after this step is completed, an aqueous infusion is made by digesting the leaves in water, at a temperature of 100° Fahrenheit. After digesting two hours, the fluid is pressed from the leaves, strained through a close flannel, and the alcoholic tincture mixed very gradually with it.

In the preparation of this extract, Mr. Laster uses the following formula: *R*, Buchu, $\mathfrak{z}$ xij.; Alcohol, $\mathfrak{z}$ xxxii.; Water, $\mathfrak{z}$ viii. Reduce the buchu to a coarse powder, moisten with eight fluid ounces of alcohol, and press firmly in a glass percolator; pour on alcohol, until thirty-two ounces of tincture are obtained. Evaporate this tincture spontaneously to four fluid ounces; withdraw the leaves from the percolator, and pour upon them eight fluid ounces of water; digest by a water bath for two hours, observing to press the leaves firmly into the water; at the end of the above time strain and very firmly press the digest from the leaves; supply the water, lost by evaporation and absorption, by pouring a small quantity upon the leaves, and again expressing and straining; add the requisite amount of this liquid to that first obtained by expression. Allow the digest thus brought to the proper measure, (eight ounces) to rest several hours, decant from the sediment, and to this liquid gradually add the evaporated tincture, and when thoroughly mixed, strain through close flannel.

There are many other improvements in pharmaceutical operations introduced by Mr. Laster, a consideration of which, will be deferred to another month.

The most rigid sanitary measures of police, hygiene, and quarantine, have been adopted by both the civil and military authorities, to prepare our city for any emergency, and we have strong reason to believe and hope, with favorable prospects, for exemption from either epidemic yellow fever or cholera.

A. J. S., M. D., one of the
Visiting Physicians to Charity Hospital.

NEW YORK, April, 1866.

Having been the first of your New York correspondents, to welcome you to the ranks of periodical medical literature, we are happy to be able thus early to congratulate you, on the success with which your enterprise is meeting, and the response to its claims by

the Profession of our Country. May success go on increasing, and while it stimulates you to continued progress in improvement, may it arouse a kindred spirit throughout the length and breadth of our land, until Medical journalism shall reach and maintain that rank to which its importance entitles it.

We have, as you have seen, ere this, a proof of the revival of this spirit in our own City, in the "Medical Record," a semi-monthly journal, edited by Dr. G. H. Shrady, which enlists the sympathies, and has already called out the labour of some of our leading men in the Profession, and the promises of similar support from many others; and we fondly hope that it will fill a void which we have regretted and been mortified at, for some time. With the fresh impetus given to medical teaching in our City, we still need a more stable and solid work of this nature, in the form of a Quarterly. That is to say, we want not merely a Quarterly, in form and size, and time of appearance, but we want one as a receptacle of such papers, as *ought* to be prepared for it, by the rising men of our Profession. For all feel that we have many, among the class, perhaps, more properly styled, the junior Practitioners, who, by the solid foundation they have laid, and the zeal and industry, as well as judgment, with which they are building the superstructure, promise to be not only ornaments to the Profession here, but the means of elevating its character, and extending its advantages throughout our Country. So has Richmond such men, so have all our large Cities; men who will continue to enlarge the boundaries of medical science, and assist in elevating the Profession to that rank to which it is entitled.

I mentioned in a former letter, the establishment of a Journal Association here, and alluded to a pleasant feature connected with it, in the form of a reunion of its members, and a few invited guests, of one of which, I gave a short notice. We have since enjoyed another of these pleasant and instructive assemblings; and on this occasion, had valuable remarks on the microscope, and some proposed improvements in that instrument, by Dr. R. K. Browne, of Brooklyn; and some clear and satisfactory elucidations of binocular vision, by Dr. H. D. Noyes, of our City, with whose name you are doubtless familiar, as connected with ophthalmology.* I would mention, in connection with our Medical Colleges, that ophthalmic and aural clinics have been established in all of them during the past winter, which promise to afford additional attractions to those who attend upon their teachings. Dr. C. R. Agnew has the

*The special or comparatively increased advantages offered by any Medical Institution, to the Student, will always be cheerfully published in this Journal. Rival Institutions, it is hoped, will thus be stimulated to increased energy or liberality, and the great cause of Medical Education be proportionally benefitted.—Ed.

charge of these in the College of Physicians and Surgeons; Drs. J. B. Hinton and D. B. St. John Roosa, in the University Medical College, and Dr. H. D. Noyes, in the Bellevue Medical College.

To give stability to the Medical Journal Association, and thus secure its permanence, a number of our leading Professional men have recently pledged themselves to make up any deficiency which may occur in the resources of the Association, until its value and necessity, are so deeply felt, as to make its advantages appreciated, and its claims responded to by the Profession.

An incident worth noting, connected with one of our Colleges, the venerable College of Physicians and Surgeons, formerly known as the Crosby Street School, and now, from its present location, the Twenty-third Street School, and more strictly, perhaps, as the Medical Department of Columbia College, is the publication of a second tri-annual, very much enlarged, catalogue of its Alumni, from the time of its foundation, 1838 to 1865, inclusive; giving more or less, in short detail, the history of each Alumnus of the institution, with the positions they have held, or are now holding, the time of graduation, the time of death, when deceased, and the disease of which they died, &c., &c. This will prove an interesting book of reference to each Alumnus, and will attach him still more to his Alma Mater, and will thus increase the hold which this venerable institution has upon the Profession. The annual meeting of the Alumni was recently held, at which an address was delivered by its President, Dr. J. G. Adams, and a collation afterwards partaken of, which was the occasion of the interchange of much pleasant feeling. At the same meeting, a fund was instituted, giving the interest of fifteen hundred dollars, for prizes for papers by the Alumni, the amount for which was given by Dr. Edward Delafield, one of its earliest pupils, for a long time a respected and valued Professor, and once its President—a rare succession of incidents and honours for one graduate. Dr. A. H. Stevens, an ex-President, though not an Alumnus, contributed one thousand dollars for a fund, the interest of which is to be appropriated for a prize, open to all, to be given every three years. Dr. W. Parker, also renewed his annual prize of one hundred dollars. Dr. Alfred C. Post was chosen President, and Dr. Gurdon Buck, Vice President, for the ensuing year.

By the time the present number of your Journal shall have been distributed, our great national organization, the American Medical Association will have commenced, and perhaps, completed its annual session at Baltimore, and we trust that the meeting will prove one of harmony, as well as of much interest; that we shall meet as representatives of a Profession, gathered to cherish the best

feelings among ourselves, and to labour in unison for the benefit of others. I trust that all parts of our country will be fully represented, and that our Southern brethren will be there.

One of your New York correspondents has given you a brief sketch of Bellevue Hospital, with some of its statistics, &c. A few words respecting the New York Hospital, the oldest institution of the kind in our city, may not be without interest. The Governors of this Hospital manage, under the same corporate capacity, the buildings in Broadway, just above the Park, (the avenue to which, with its majestic row of elms, forms so attractive a feature from the streets,) devoted to medical and surgical patients, and the Asylum at Bloomingdale, in the vicinity of the Central Park, for the insane. By an arrangement with the Secretary of the Treasury, sick seamen, who have paid hospital money, are received and taken care of; and during the year 1865, the proportion of this class of patients to the other classes was 44 25-100 per cent. The whole number of medical and surgical patients, during that year, was 3,167. Of this number, 326 died. Among these deaths, are included 120 cases of sudden death from accidents of different kinds, upon which coroner's inquests were held, leaving the number of deaths from other causes 206. Of the whole number under actual treatment, during the year, 10 33-100 per cent. died; the ratio of mortality on all discharged, having been 11 17-100 per cent. Of the deaths, the per centage of medical and surgical cases was just the same. Of the whole number of cases treated, 1,740 were surgical and 1,427 medical, being about 55 per cent. of the former to 45 per cent. of the latter. The proportion of deaths, in the whole number treated, deducting the 120 cases of sudden deaths, was about 3 per cent. of surgical, to about 12 per cent. of medical cases. The average daily number in the hospital, has been about 240. The ratio of the deaths, after deducting those under the charge of the coroner is 7 per cent.

We would remark, in this connection, that the valuable library of this institution, was enriched, during the past year, by the bequest of about five hundred volumes, many of them very rare and valuable, from the late Dr. John Watson, formerly one of the attending Surgeons.

The whole number of patients treated at the Bloomingdale Asylum for the Insane, during the year 1865, was 323, of whom 66 were cured, 136 improved, and 28 died: of this number, 148 are males, and 175 females. The average number in the Asylum, during the year, was 176.

The cholera, as we should naturally anticipate, is attracting the attention of the Profession in this city. At the same time, it is not

an unfrequent topic of conversation and of inquiry among our patients. The *Medical Record* has commenced the publication of a series of lectures on the subject by Prof. A. Clark, which, with his extensive knowledge and careful mode of study, and his well-known reputation for thorough manner of treating the subjects he undertakes to discuss, promises to be exhaustive, as to what is worth knowing on this important subject, in which all are so much interested.

The Academy of Medicine has also made it a subject of discussion for several evenings, with the result of calling out much that is interesting on the subject of its etiology and mode of propagation. *The acknowledged portability of the cause, whatever that may be, and the change of views evidently effected by the more recent study of the subject, both in this country and in Europe, and the consequent importance of more or less insisting upon quarantine regulations, and, more especially, so far as regards the excretions, from patients with the disease, and their clothing, and the necessity of thoroughly disinfecting them, have formed valuable portions of the information derived from this discussion.* Dr. Wm. Read, City Physician of Boston, in a document addressed to the Health Commissioners of that City, in January last, has entirely changed the opinion which he gave to that body in October, 1865, respecting the non-contagious and infectious nature of the disease, and while he frankly confesses such a change, gives satisfactory reasons for it, founded on evidence on those points, both direct and reliable, derived from Medical journals in this country and Europe.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

L.—HEAT CONSIDERED AS A MODE OF MOTION. BEING A COURSE OF LECTURES, DELIVERED AT THE ROYAL INSTITUTION OF GREAT BRITAIN. BY JOHN TYNDALL, F. R. S., &c., Professor of Natural Philosophy in the Royal Institution. London. 1863.

[CONCLUDED.]

But rich and instructive as are Prof. Tyndall's discussions, on the subjects thus noticed, even more impressive to us, are his exhibitions in regard to radiant heat. This portion of his course, is thus introduced (Lect. viii., pp. 243-4). "We have this day reached the boundary of one of the two great divisions of our subject; hitherto, we have dealt with heat, while associated with solid, liquid, or gaseous bodies. We have found it competent to produce changes of volume in all these bodies. We have also observed it reducing solids to liquids, and liquids to vapours; we have seen it transmitted through solids, by the process of conduction, and distributing itself through liquids and gases, by the process of convection. We have now to follow it into conditions of existence, different from any which we have examined heretofore."

"I hang this heated copper ball in the air; you see it glow, the glow sinks, the ball becomes obscure; in popular language, the ball cools. Bearing in mind what

has been said on the nature of heat, we must regard this cooling as a loss of motion on the part of the ball. But motion cannot be lost without being imparted to something; to what then is the molecular motion of this ball transferred? You would, perhaps, answer, to the air, and this is partly true. Over the ball, air is passing, and rising in a heated column, which is quite visible against the screen, when we allow the electric beam to pass through the warmed air. But not the whole, nor even the chief part, of the molecular motion of the ball is lost in this way. If the ball were placed in *vacuo*, it would still cool." Experiments illustrating this are then introduced, after which the lecturer proceeds: "But if not to the air, to what is the motion of our cooling ball communicated? We must ascend by easy steps, to the answer to this question." The phenomena of sound, and of light are here skillfully introduced, to facilitate a right understanding of the case; the sensible vibrations concerned in the former, and the calculable waves of the latter, inconceivably brief as they are, at the rate of 33,000 in an inch for red rays, and 57,000 in an inch for violet as they travel through space, serving as illustrations of the speeding minute impulses sent through the all-pervading inter-stellar ether, by every body radiating heat. With the subject, thus cleared, the Professor proceeds: "When, therefore, I place this red-hot copper ball before you, and watch the waning of its sight, you will have a perfectly clear conception of what is occurring here. The atoms of the ball oscillate, but they oscillate in a resisting medium, on which their moving force is expended, and which transmits it on all sides with inconceivable velocity. The oscillations competent to produce light are now exhausted, the ball is quite dark, still its atoms oscillate, and still their oscillations are taken up and transmitted, on all sides, by the ether. The ball cools, as it thus loses its molecular motion, but no cooling, to which it can be practically subjected can entirely deprive it of its motion. That is to say, all bodies, whatever be their temperature, are radiating heat. From the body of every individual here present, waves are speeding away, some of which strike upon this cooling ball, and restore a portion of its lost motion. Every superficial atom of each mass is sending forth its waves, which cross those that move in the opposite direction, every wave asserting its own individuality, amid the entanglement of its fellows. When the sense of motion received, is greater than that given out, warming is the consequence; when the sense of motion given out, is greater than that received, chilling takes place."

Among inquiries into radiant heat, the lecturer deals most happily with the question of its transmission and absorption by various bodies. His most surprising and important exhibitions, perhaps, are those showing the relative absorptive powers of various gases and vapours. Reduced to such tenuity, as to afford only about one-thirtieth the tension of common air, a few, which we take space to mention, were found to absorb the radiant beam sent through them, in the proportions of the following numbers: Air, oxygen, nitrogen, hydrogen, each one; ammonia 7,260; olefiant gas 7,950; sulphurous acid 8,800. And on these astonishing proportions, the Professor remarks, (Lecture x. pp. 349-50,) "What extraordinary differences in the constitution and character of the ultimate particles of various gases, do the above results reveal! For every individual ray struck down by the air, oxygen, hydrogen, or nitrogen—the ammonia strikes down a brigade of 7,260 rays; the olefiant gas a brigade of 7,950; while the sulphurous acid destroys 8,800. With these results before us, we can hardly help attempting to visualize the atoms themselves, trying to discern, with the eye of intellect, the actual physical qualities, on which these vast differences depend. These atoms are particles of matter, plunged in an elastic medium, accepting its motions, and imparting their motions to it. Is the hope unwarranted, that we may be able finally to make radiant heat such a *feeler* of atomic constitution, that we shall be able to infer from their action upon it, the mechanism of the ultimate particles of matter themselves? Have we even now no glimpse of the atomic qualities necessary to form a good absorber? You remember our experiments with gold, silver and copper; you recollect how feebly they radiate, and how feebly they absorb; that their particles glide through the ether, with scarcely any resistance, may also be inferred from the length of time which they require to cool in *vacuo*. The metals are *elements*; their atoms swing singly; in compound substances they swing in groups. And now, in bodies as diverse from the

metals as can possibly be conceived, we find the same significant fact making its appearance. Oxygen, hydrogen, nitrogen, and air, are elements, or mixtures of elements, and, both as regards radiation and absorption, their feebleness is declared. They swing in the ether with scarcely any loss of moving force. They bear the same relation to the compound gases, that a smooth cylinder turning in water does to a paddle-wheel. They create a small comparative disturbance."

Continuing these investigations with extraordinary success, the lecturer deals at length with aqueous vapour, and as this substance is at all times so extensively diffused, the actual determination of its relations to radiant heat becomes of extreme practical significance. Professor Tyndall's conclusions on this point, therefore, cannot with propriety be passed over, even in the brief and inadequate notice to which we must be limited. "Up to this point," he says, (Lect. xi, pp. 374-5,) "I have purposely omitted all reference to the most important vapour of all, as far as our world is concerned—I mean, of course, the vapour of water. This vapour, as you know, is always diffused through the atmosphere. The clearest day is not exempt from it; indeed, in the Alps, the purest skies are often the most treacherous, the blue deepening with the amount of aqueous vapour in the air. It is needless, therefore, to remind you, that when I speak of aqueous vapour, I mean nothing visible; it is not fog—it is not cloud—it is not mist of any kind. These are formed of vapour, which has been condensed into water; but the true vapour, with which we have to deal is an impalpable transparent gas. It is diffused everywhere throughout the atmosphere, though in very different proportions. The quantity of this vapour is small. Oxygen and nitrogen constitute about 99½ per cent of our atmosphere; of the remaining 0.5, about 0.45 is aqueous vapour; the residue is carbonic acid. Had we not been already acquainted with the action of almost infinitesimal quantities of matter on radiant heat, we might well despair of being able to establish a measurable action on the part of the aqueous vapour of our atmosphere. Indeed, I quite neglected the action of this substance for a time, and could hardly credit my first result, which made the action of the aqueous vapour of our laboratory fifteen times that of the air in which it was diffused. This, however, by no means expresses the true relation between aqueous vapour and dry air." An experiment here introduced, satisfactorily shows this, and in connection with numerous other illustrations, establishes the conclusion, that "*the aqueous vapour of the air exerts on radiant heat an absorption seventy times that of the air in which it is diffused*"

By way of apology, for dwelling on this particular subject, with extreme care, and at considerable length, the author adds: "Were this subject less important, I should not have dwelt upon it so long. I thought it right to remove every objection, so that meteorologists might apply, without the faintest misgiving, the results of experiment. The applications of these results to their science must be innumerable; and here I cannot but regret that the incompleteness of my knowledge prevents me from making the proper applications myself."

This last expression should be to us most suggestive. If so accomplished a man of science, familiar with latest researches into the secrets of nature, has to lament the imperfection of his knowledge, how deeply should we feel, that we may, in earnest set to work to remedy the meagreness of our attainments. It is hardly too much to say, that the best informed among us, are very far behind the stage of scientific culture, reached by Professor Tyndall and his European associate.

This peculiar relation of aqueous vapour in the air, to radiant heat, must at once be seen, with singular significance, to bear upon the phenomena of dew and frost. And the lecturer, accordingly, applies his discoveries to the more thorough development of that admirable explanation of these phenomena, given by Dr. Wells, nearly fifty years ago. One practical hint, growing out of Prof. Tyndall's determinations, now announced, we take occasion to give. Dr. Wells had, in his celebrated Essay on Dew, said with exquisite simplicity, "I had often, in the pride of half-knowledge, smiled at the means, frequently employed by gardeners, to protect tender plants from cold, as it appeared to me impossible that a thin mat, or any such flimsy substance could prevent them from attaining the temperature of the atmosphere, by which, alone, I thought them liable to be injured. But when I learned that bodies, on the surface of the earth, become, during a still and serene night, colder than the atmosphere, by radiating their heat to the heavens, I perceived immediately a just

reason for the practice which I had before deemed useless." Similarly, Professor Tyndal remarks: "The nipping of tender plants by frost, even when the air of the garden is some degrees above the freezing temperature, is to be referred to chilling by radiation. A cob web screen would be sufficient to preserve them from injury." The practical suggestion we have to offer, is this, may not the vapour of water be made to secure the purpose of such screen? Prof. Tyndall has proved that it is extremely impervious to radiant heat and if spread, as an envelope, around tender plants, and the blossoms of delicate fruit trees, may it not so retard their radiation and consequent fall of temperature, as to guard them against destruction by frost. Vessels of water, we have for many years, known to be placed under choice peach trees, in the evening, when frost was apprehended, for the purpose of, in some way, unimagined by those who used the device, protecting the first blossoms against destructive cold. We now learn that there may be in the procedure profoundest philosophy. That the vapour of this water, as it rises and permeates the air around the tree, may, by its obstinate refusal of free passage to the radiant heat of the branches and blossoms, compel them to refrain from suicide by waste of temperature. The matter is at least worthy of thorough trial.

Necessarily extended beyond original expectation, as our notice of these pregnant lectures has become, toward anything like justice to their author, the subject, or our readers, we cannot omit one other discussion, the most remarkable, perhaps, of the volume, that in which some definite conclusion is approached, as to the Sun's constitution. Special hindrances have, hitherto, prevented his satisfactorily examining the heat of the lunar beam, though he has no doubt of its existence. And the inadequate experiment of Melloni, determining a slight amount of heat in the lunar rays, he adduces as all thus far to be affirmed on the subject. The great problem of the Sun's constitution, he thus approaches. (Lect. xii., p. 408, and seq.) "You already know how the spectrum of the electric light is formed. Here you have one upon the screen, two feet wide and eight long, with all its magnificent gradations of colour, one fading into the other, without solution of continuity. The light from which this spectrum is derived, is emitted from the incandescent carbon points, within one electric lamp. All other solids give a similar spectrum. When I raise this platinum wire to whiteness, by an electric current, and examine its light by a prism, I find the same gradation of colours, and no gap whatever between one colour and the other. But by intense heat—by the heat of the electric lamp, for example—I can volatilise that platinum, and throw upon the screen, not the spectrum of the incandescent solid, but of its *incandescent vapour*. The spectrum is now changed; instead of being a continuous gradation of colours, it consists of a series of brilliant lines, separated from each other by spaces of darkness.

In this way zinc is examined; it gives a spectrum consisting of "splendid bands of red and blue." Copper streams forth "bands of brilliant green." Brass, the alloy of zinc and copper, "emits without confusion, the rays peculiar to the metals of which it is composed."

Every metal emits its own system of bands, which are as characteristic of it as those physical and chemical qualities which give it its individuality. By a method of experiment sufficiently refined we can measure, accurately, the position of the bright lines of every known metal. Acquainted with such lines we should, by the mere inspection of the spectrum of any single metal, be able, at once, to declare its name. And not only so, but in the case of a mixed spectrum, we should be able to declare the constituents of the mixture from which it emanated."

These points being established, the lecturer proceeds to determine the effect of passing beams of the several colours, through vapours and flames of their own, and of different hues, and establishes the certainty that "the light which the flame of any metal absorbs, is precisely that which it can emit." He then adds: "Were I to raise a mixture producing a striped spectrum, to a temperature sufficiently intense to render its vapours incandescent; on placing its flame in the path of a beam producing a continuous spectrum, I should cut out of the latter the precise rays emitted by the components of my mixture, I should thus furrow my spectrum by a series of dark bands, equal in number to the bright bands produced, when the mixture itself was the source of light."

From this, Prof. Tyndall advances to "one of the most remarkable generaliza-

tions of our age," thus: "When the light of the Sun is properly decomposed, the spectrum is seen furrowed by innumerable dark lines. A few of these were observed, for the first time, by Dr. Wollaston; but they were investigated with profound skill by Fraunhofer, and called after him, Fraunhofer's lines. It has long been supposed that these dark spaces were caused by the absorption of the rays which correspond to them, in the atmosphere of the Sun; but nobody knew how. We are now led to a theory of the constitution of the Sun, which renders a complete account of the lines of Fraunhofer. Could we abolish the central orb, and obtain the spectrum of the gaseous envelope, we should obtain a striped spectrum, each bright band of which, would coincide with one of Fraunhofer's dark lines. These lines, therefore, are spaces of relative, not of absolute darkness; upon them the rays of the absorbent photosphere fall; but these not being sufficiently intense to make good the light intercepted, the spaces which they illuminate are dark, in comparison to the general brilliancy of the spectrum."

Proceeding with this method, and rigidly comparing the spectra of various metals with the solar spectrum, Professor Tyndall concludes that "iron almost certainly exists in the atmosphere of the Sun," and adds: "Professor Kirchhof, to whose genius we owe this splendid generalization, finds iron, calcium, magnesium, sodium, chromium, and other metals, to be constituents of the solar atmosphere."

The intensity of solar heat, and the source of its unfailing supply, are questions so intimately involved in our author's subject, that they of course receive from him effectual treatment. Estimated on the basis of nice instrumental measurement, the solar energy is expressed by him in the following striking statement: "The total amount of solar heat received by the earth in a year, if distributed uniformly over the earth's surface, would be sufficient to liquify a layer of ice 100 feet thick, and covering the whole earth." The quantity of solar heat intercepted by the earth, is only one twenty-three-hundred millionth part of the total radiation." The heat emitted by the Sun, if used to melt a stratum of ice applied to the Sun's surface, would liquify the ice at the rate of 2400 feet an hour. It would boil, per hour, 700,000 millions of cubic miles of ice cold water." &c

As to the perpetual supply of this energy, our author concludes it cannot be combustion. "Were the Sun a solid block of coal, and were it allowed a sufficient supply of oxygen to enable it to burn at the rate necessary to produce the observed emission, it would be utterly consumed in 5,000 years." Nor can it be the Sun's friction against something in surrounding space, as he revolves every twenty-five days, because even if the action were conceivable, as it is not, the amount of heat thus generated calculable from known elements,— "would cover more than one, but less than two centuries of emission." The doctrine which he adopts as adequately sustained and satisfactory, is that of Meyer, Waterston and Professor Thomson, as expressed by the latter. "The source of energy from which solar heat is derived, is undoubtedly meteoric. The principal source, perhaps the sole appreciable efficient source, is in bodies circulating round the Sun at present inside the earth's orbit, and probably seen in the sunlight, by us called zodiacal light. The store of energy for future sunlight, is at present partly dynamical—that of the motions of these bodies round the Sun; and partly potential—that of their gravitation towards the Sun. This latter is gradually being spent—half against the resisting medium, and half in causing a continuous increase of the former. Each meteor thus goes on moving faster and faster, and getting nearer and nearer the centre, until some time, very suddenly, it gets so much entangled in the solar atmosphere as to begin to lose velocity. In a few seconds more, it is at rest on the Sun's surface, and the energy given up is vibrated across the district where it was gathered during so many ages, ultimately to penetrate, as light, the remotest regions of space." Carrying out these principles, Thomson has calculated the amount of heat which would be generated by the falling of all the planets of our system into the Sun; that is, the heat developed by the transfer in such case of their mass motions into molecular motions, and he makes it sufficient to cover the solar emission through 45,589 years.

With one more extract from Prof. Tyndall, and a remark or two on the whole, we shall now close this imperfect review of the lectures. "Grand and marvellous as are these questions, regarding the physical constitution of the Sun, they are but a

portion of the wonders connected with our luminary. His relationship to life is yet to be referred to. Leaving out of account the eruptions of volcanoes, and the ebb and flow of the tides, every mechanical action on the earth's surface, every manifestation of power, organic and inorganic, vital and physical, is produced by the Sun. His warmth keeps the sea liquid, and the atmosphere a gas; and all the storms which agitate both, are blown by the mechanical force of the Sun. He lifts the rivers and the glacier up the mountains, and thus the cataract and the avalanche shoot with an energy derived immediately from him. Thunder and lightning are also his transmuted strength. Every fire that burns, and every flame that glows, dispenses light and heat, which originally belonged to the Sun. In these days, unhappily, the news of battle is familiar to us, but every shock, and every charge, is an application, or misapplication of the mechanical force of the Sun. He blows the trumpet, he urges the projectile, he bursts the bomb. And remember, this is not poetry, but rigid mechanical truth. He rears, as I have said, the whole vegetable world, and through it the animal; the lilies of the field, are his workmanship, the verdure of the meadows, and the cattle upon a thousand hills. He forms the muscles, he urges the blood, he builds the brain. His fleetness is in the lion's foot; he springs in the panther; he soars in the eagle; he slides in the snake. He builds the forest and hews it down, the power which raised the tree, and which wields the axe, being one and the same; the clover sprouts and blossoms, and the scythe of the mower, swing by the operation of the same force. The Sun digs the ore from our mines, he rolls the iron, he rivets the plates, he boils the water, he draws the train. He not only grows the cotton, but he spins the fibre and weaves the web. There is not a hammer-raised, a wheel-turned, or a shuttle-thrown, that is not raised and turned and thrown by the Sun. His energy is poured freely into space, but our world is a halting place, where this energy is conditioned. Here the Proteus works his spells; the self-same essence takes a million shapes and hues, and finally dissolves into its primitive and almost formless form. The Sun comes to us as heat; he quits us as heat; and between his entrance and departure, the multifarious powers of our globe appear. They are all special forms of solar power, and the mould into which his strength is temporarily poured, in passing from its source through infinitude. Multiplying all our powers, by millions of millions we do not reach the Sun's expenditure. And still, notwithstanding the enormous drain, in the lapse of human history, we are unable to detect a diminution of his store. Measured by our largest terrestrial standards, such a reservoir of power is infinite; but it is our privilege to rise above these standards, and to regard the Sun, himself, as a speck in infinite extension. A mere drop in the universal sea. We analyze the space in which he is immersed, and which is the vehicle of his power. We pass to other systems, and other Suns, each pouring forth energy like our own, but still, without infringing of the law, which reveals immutability in the midst of change, which recognizes incessant transference and conversion, but neither final gain nor loss. This law generalizes the aphorism of Solomon, 'that there is nothing new under the Sun,' by teaching us to detect everywhere, under its infinite variety of appearances, the same primeval force."

We have now two remarks to make. First, by way of commending this book and its subject, with kindred discussions of able men of the day, to our cultivated classes, and more particularly, to our scientific Professors. It must be obvious, from even the inadequate exhibition, we have given of these lectures, that on the one hand, they are well entitled to the careful steady of all thinking men, and that on the other hand, we are lagging far in the rear of others of our generation, in attainable knowledge; and that we are suffering thereby, alike intellectual and material loss. Those among us, charged with the responsibility of directing our higher education, should, therefore, especially see to it, that efficient efforts be at once made to remedy the deficiency, and bring up scientific culture in our Colleges and Professional Schools to a standard corresponding to the attainments of the age.

The other remark, which we feel bound to make before closing, is to express regret that a volume, which in mere scientific aspect, is so instructive and so admirable, should have its general value seriously impaired by an apparent disregard of those important verities which underlie all human happiness, and must prove even more essential than physical researches, however valuable. Those verities, as they have

commanded the acceptance of the giant intellects of the race, are also evidenced to the general convictions of cultivated humanity, with accumulation of proof never to be invalidated. Professor Tyndall may not, indeed, have intended an attempt to undermine them. Nor has he distinctly expressed hostility to them. He has, however, left his volume open to the grave suspicion of being designed to convey something like the cheerless doctrine of material atheism; not only by ignoring, throughout, all allusion to any agency in the universe superior to mechanical force, but by so speaking of this force, as to leave the impression that he does not believe in an intelligent Creator and Ruler of the world. This seems to be intimated in portions of the extract we have given last, interesting and poetic as is the language; but it seems to be more distinctly conveyed in his closing periods, forcible, as in other respects they are, and noble, as they would be, if instinct with the life of a higher aspiration. "To Nature nothing can be added; from Nature nothing can be taken away; the sum of her energies is constant, and the utmost man can do in the pursuit of physical truth, or in the applications of physical knowledge, is to shift the constituents of the never varying total, and out of one of them to form another. The law of conservation, rigidly excludes both creation and annihilation. Waves may change to ripples, and ripples to waves; magnitude may be substituted for number, and number for magnitude; asteriods may aggregate to Suns; Suns may resolve themselves into flora and fauna, and flora and fauna melt into air—the flow of power is eternally the same. It rolls in music through the ages, and all terrestrial energy—the manifestations of life, as well as the display of phenomena—are but the modulations of its rhythm."

If this mode of expression, and others like it, in the volume, are really to be understood in an atheistic sense, it is another sad instance of the strange perversion of fine endowments. For, surely, to a sound mind no absurdity can surpass the insatiation of supposing mere mechanical force capable of originating man himself, with all his attributes, and adapting every atom and every process in the Universe, so wondrously to its peculiar service in one grand, harmonious whole. That vast orderly system, of which, in some aspects, our author so justly speaks, of itself affords demonstration to a candid mind, of Supreme Power. Those very correlations which ensure transference, and consequent conservation of force and stability to the world. What are they, but so many voices proclaiming the direction of unerring intelligence in the original structure and grand ongoing of the Universe! How could Nature, unconscious, undesigning, unintelligent, endow and wield original force with such wondrous plan, such consummate skill!

We conclude by expressing the hope that our gifted author has used language rather incautiously, than with evil purpose, on a point so serious. And having distinctly indicated the error, we again commend the lectures to close and general study, as a wonderful exposition of a most important department of science.

ANNUAL CIRCULAR OF THE TRUSTEES AND FACULTY OF THE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA. With a Catalogue of the Students, and list of Graduates. Session 1865-66.

This College has been re-opened. The Class of the last Session numbered thirty-five, and thirteen received the diploma, at the usual period of graduation. With a warm wish for the success of this old and admirable College, it must be stated, that there are many causes for regret in the Catalogue received. The requirements for matriculation are confined to the payment of the sum of \$5.00.

The Student, before graduation, has to show "that he has attended, under the Demonstrator, a course of dissections"—Anatomy, being justly stated, elsewhere in the Catalogue, to be the very foundation of Medical science; also, "that he has studied, under the supervision of some respectable Practitioner," the duration of the period of this study being arbitrary and undefined. The Thesis is no longer required. This startling and surprising innovation will meet with the unsparring condemnation of the Profession, and will certainly injure, very seriously, the subsequent status of each graduate.

The appointment of junior Professors (or "Extraordinary Professors," as they are

termed in the Catalogue,) who are required to lecture in the afternoon, and the examinations of the Class, during each evening, by the appropriate Professor, are valuable and useful improvements in Administration. The status of each applicant for graduation, is publicly read to the assembled class, on Commencement day. This is an admirable and most effective policy; it is just to all, and highly commendable. The pages of the Circular are stained, by frequent errors in orthography and syntax.

THE SPECIAL TREATMENT OF SYPHILIS, CHRONIC RHEUMATISM AND SCROFULA. By Dr. E. J. Goodwin, of Washington Springs, Va. P. O., Glade Springs.

This is a pamphlet of twenty-eight pages. The only fact necessary to mention, in regard to it is, that the author claims special success in the treatment of these diseases, by the use of "a plant, indigenous to the mountains of Virginia; but *unknown, as yet*, to the Pharmacopœia of the United States."

This plant, the author names "Eutrophia, as indicative of its effects on the system." A preparation of it, with other component principles, in regard to all of which, the Profession is entirely ignorant, is bottled and sold in the Richmond market. Ten Physicians, of Washington and Smyth Counties, give a joint recommendation in behalf of Dr. Goodwin, believing that his "success is attributable, to *some* important addition which he has made to the remedies commonly employed." What this "addition" is, these Physicians do not state. They have given the support of their signatures, to the preparer of a compound, which they can describe only as "*some* important addition" to present remedies.

If this "addition" be understood, it should have been clearly stated; if it is not understood, these gentlemen present themselves to the Profession, as the practical advocates of an ordinary nostrum. In either instance, there is grave error.

LIBRARY MAGAZINE. No. 1. Containing the Book of the Revelation of St. John, the Divine, with Notes and Explanations. New York, Stribling & Co.; Philadelphia, Bradley & Co.; London and Liverpool, George Philip & Son; Richmond, Va, Randolph & English; Mobile, Ala., J. K. Randall & Co.

The first number of this Magazine, has been received. From its extensive dissemination, and from the well known names of the many Publishers enlisted, this work will undoubtedly be carefully conducted, and profitably read.

MISCELLANEOUS.

DISINFECTANTS AND THEIR APPLICATIONS.

That there can be no substitute for *fresh air*, to meet the physiological requirements of respiration and health, should be indelibly impressed upon every mind. Better that all substances, at present employed as disinfectants and deodorants, were at once prohibited, than that such agents should practically tend to be regarded, as *substitutes for a pure atmosphere*. But the necessities and privations of life, the multiplied agencies of disease, and the vitiating conditions attendant upon poverty and sickness, create necessities for the employment of chemical and other artificial agencies to miti-

gate, and, in some measure, prevent the otherwise inevitable contamination of the local atmosphere of crowded or unclean quarters; and it is only such necessary demands for the employment of such disinfectants, that justify even the occasional allusion here made respecting them. They are simply aids in restoring and preserving healthful purity, and no substitutes for cleanliness and pure air.

For the convenience of persons, who may have occasion to refresh the memory with the more practical facts relating to special disinfectants, and the best method of their application, the following notes are given in reference to this subject:

The principal disinfecting agents may be classified as follows:

Absorbents and retainers of noxious effluvia, particularly the ammoniacal and sulphuretted gases—Charcoal, sulphate of lime (plaster of paris), sulphite of lime, silicate of alumina (porous clay).

Absorbents of moisture; chemical agents that act upon organic matter, and recombine some of the elements of noxious effluvia—Quicklime, sulphuric acid, hydrochloric acid, nitric and nitrous acids.

Soluble, salts that are particularly available for arresting processes of decomposition, and for controlling phosphuretted and sulphuretted gases—Nitrate of lead, chloride of zinc, proto-chloride of iron, proto-sulphate of iron.

Antiseptics, that act diffusively and rapidly, though less permanently than some others; active in destroying compound gases—Chloride of gas, hypochlorite of soda, (Labarrique's solution,) chloride of lime.

The most prompt and efficient antiseptic known—Bromine.

Antiseptic, and of great power as an oxidizer, and as an available source of ozone—Permanganate of potassa.

Antiseptic and deodorant; capable of a great variety, extent, and economy of applications, and acting with considerable energy and permanency—Carbolic acid and coal-tar compounds.

Destructive of contagious virus and all transportable infections—Heat.

Destructive of yellow-fever miasma, and of the malaria that produces the "paludal fevers"—Frost.

Considered *theoretically*, we may regard all disinfecting agents under the following heads, and perhaps this would be the more scientific arrangement of them: 1. Absorbents of moisture and of noxious effluvia; 2. Oxidizers (ozone the most active) and Deoxidizers; 3. Other chemical agents that break up noxious compounds; 4. Agents that form indestructible compounds with putrescent materials; or that destroy cell-life and the cryptogamic and infusorial

organisms. But as the present state of chemical and medical knowledge only enables us to make such general statements respecting the theoretical action of disinfectants, we will follow our first classification by a few practical statements, concerning each of the articles mentioned.

Charcoal.—Freshly burned and broken, this substance will absorb from ten to fourteen per cent. its own weight of gases and moisture from the atmosphere during the period of twenty-four hours; and it is capable of absorbing ninety times its own volume of ammonia, or fifty-five times its own volume of sulphuretted hydrogen. Properly applied, charcoal is an arrester of putrefaction, and, as such, it is worthy of more extensive employment in the better preservation of animal food, when found in an unwholesome state. As a disinfectant or deodorant, for extensive use in masses of putrescent material, and for local purification, fresh charcoal is of acknowledged value. The British Sanitary Commission, in the Crimea, ordered whole ship-loads of peat charcoal, which they used in the progress of their work of purification in the hospitals, barracks, or camps in the East. A report of that Commission states, that “perhaps the best deodorizing compound was one used by the inspectors in all their works. It consisted of one part of peat charcoal, one part of quicklime, and four parts of sand or gravel.” It should be remembered that the preservation of the disinfecting power of charcoal powder depends upon its being both fresh and dry.

Sulphate of Lime, Sulphite of Lime, and Porous Clay.—All these substances are valuable absorbents of ammoniacal and sulphuretted effluvia, and they constitute exceedingly convenient vehicles and auxiliary menstrua for some of the more potent and expensive antiseptics. The much vaunted French disinfectant, known as the disinfecting powder of Messrs Corne & Demeaux, consists of about ninety-four per cent. of finely ground gypsum, and five or six per cent. of coal-tar, or the “heavy oil of coal tar.” McDougall’s powder, and the Ridgewood disinfectant, consist of carbolic acid, combined with the sulphate of lime and porous silicate of alumina, respectively, as will be noticed upon a subsequent page. Hypo-sulphite of lime possesses the property of absolutely arresting fermentation or the catalytic processes. The several substances of this first class, and their compounds, particularly those with carbolic acid or coal-tar, are among the most valuable disinfectants, especially when large quantities of cheap and effectual articles of the kind are required.

Quicklime.—With sulphuretted and with phosphoretted effluvia, and with humid vapours, freshly burned lime unites with great

avidity, and as an absorbent of moisture and a chemical base for many acids, it is of peculiar value; but lime also eliminates or sets free the ammoniacal gases, and, like the acids of our second-class disinfectants, it is of less permanent value than some other agents. It is one of the most convenient antiseptics, and for local applications, as in white-washing, sprinkling, desiccating damp surfaces or putrescent substances, and for temporarily arresting putrefaction, it is invaluable. Lime should be used dry and unslacked, except it be for the special purpose of combining with carbonic acid gas; for the latter object it should be reduced to a creamy hydrate, and, in overcrowded wards it may be usefully employed in this way, distributed in shallow plates. Distributed in like manner, sulphuric acid may be employed for diminishing the humidity of the atmosphere in a closed and damp apartment; but for this purpose, it is usually better to resort to strong currents of air, by means of through and through ventilation, when practicable.

Nitrous acid is a valuable antiseptic, and the production and application of its fumes constituted the famous disinfecting process of Dr. Carmichael Smyth.

The fumes of nitrous acid, that so long had fame for disinfecting purposes in the barracks, hospitals, and navy of great Britain, may be readily produced by heating a mixture of nitrate of potassa and sulphuric acid in an iron or porcelain dish. Persons who resort to this method of fumigation, should bear in mind the fact, that strong fumes of nitrous acid are dangerously irritating to the throat and lungs. These fuming acids are powerful oxidizers, but their avidity for water, together with their peculiarities of chemical affinity, render their value as disinfectants somewhat uncertain.

Nitrate of Lead.—Practical considerations place this salt at the head of odourless disinfecting salts, most available for certain local applications, such as deodorizing a close apartment, and the bedding, etc., of sick persons, by means of a solution distributed on shallow vessels or upon saturated cloths. The nitrate of lead is the basis of "Ledoyen's liquid."

Permanganate of Potassa.—This is far the most efficient salt of this kind, and its cost alone should limit its employment. It is a chemical agent of different and far greater powers than any of the metallic salts in this third class.

Chloride of Zinc.—Though more powerfully antiseptic than nitrate of lead, it is not as valuable a deodorant. It is most to be valued for its property of promptly arresting putrefactive processes. As "Sir William Burnett's disinfectant," it is widely known.

Both this salt, and that of lead, last mentioned, may be employed to delay decomposition in a corpse, in the absence of an

embalmer. This is best accomplished, by wrapping the dead body in a folded sheet that is saturated with either of these salts.

The Proto-chloride and the Proto-sulphate of Iron.—These are valuable and very cheap agents for aiding in the control of ammoniacal and sulphuretted effluvia. Being soluble, and very cheap, these salts are capable of varied and convenient applications, separately, or in combination with other deodorizing materials.

Chlorine and its Alkaline Compounds.—The common preparations of chlorinated soda and chloride of lime act with great efficiency when the carbonic, sulphuretted, or ammoniacal gases are brought into contact with them. As their special uses require no explanation in this place, we simply append brief directions for generating chlorine gas, where it may be required more immediately and copiously, than it would be given off by the alkaline chlorides or hypochlorites.

Ready Method.—Pour dilute hydrochloric, sulphuric, nitric, or acetic acid upon chlorides of lime, zinc or soda. This may be done gradually, by means of a glass or lead syphon, or by the capillary syphon of lamp-wick, dropping the acid upon the chloride, if desirable, to evolve the chlorine steadily for many hours.

Cheap Method.—Mix six parts of peroxide of manganese with eight parts of table salt (chloride of sodium) in a lead or iron vessel, which should be set freely within another vessel of larger capacity; pour upon the mixture of manganese and salt thirteen parts of sulphuric acid, which may be diluted with water, to abate the rapidity of the evolution of the gas. Heat the vessel containing this mixture by means of hot water or steam, if more rapid evolution of the gas is required.

Ordinary Method.—Mix four parts of fuming hydrochloric (muriatic) acid, with one part of coarse powder of peroxide of manganese, adding water, as may be desired, to abate the rapidity of evolution. Apply moderate heat. The vessel may be of a kind to permit the use of the acid and the heat. The heat, however, by this method, is not indispensable.

A very neat method of evolving chlorine in hospitals and transports, is to put a few ounces of the black oxide of manganese into a stout glass bottle, of large size, rig a bulbous pipette to a perforated cork or stopper, and fitting an india-rubber bulb upon the headless bulb of the pipette, fill the pipette with muriatic acid, and evolve the chlorine at pleasure by occasional pressure upon the elastic cap.

Bromine and its Compounds.—This most powerful antiseptic has recently been brought into requisition in hospitals as a special disinfectant. It is applied both topically and diffusively. Bromine is

exceedingly penetrating and energetic in its action, and consequently is to be manipulated and applied with proper caution. It is principally employed in its pure liquid form, or in combination with bromide or potassium. Special caution should be used not to respire the strong fumes or any pulverized compound of bromine, as its effects when inhaled are suffocating.

DIRECTIONS FOR USE.—1. *For Fumigation.*—Place vessels, containing one ounce of the solution, at different points of the ward, and in number sufficient to secure in the latter the constant presence of the odour of bromine.

Permanganate of Potassa.—This is a soluble substance, peculiarly convenient of application, and remarkably certain and efficient in its effects, as a disinfectant. Its employment as a deodorizer and prophylactic, is limited mainly to topical applications, putrescent materials, and to general effect upon the atmosphere of contaminated apartments, by means of evaporating cloths saturated with a strong solution of the permanganate. The oxidizing and antiseptic effects of the permanganate of potassa, upon organic and putrescent matter, are remarkable. It is the most sensitive test for the presence of organic matter, which it oxidizes with wonderful facility. As this is an expensive and delicate substance, it is to be employed economically, upon saturated cloths, or in dilute solutions upon plates. For purifying offensive water, for purposes of beverage, etc., a standard solution should be dropped into the vessel of water, until the tinge of the permanganate begins to appear. The rapid and effectual oxidation of the organic (*putrid*) elements of impure water, and other substances, even of the atmosphere itself, when brought in contact with solutions of this salt, and the consequent and almost instant deodorization of such impurities, render this disinfectant of priceless value for practical purposes. And as all preparations of manganese, are therapeutically tonic, probably the minute quantities of this salt, that would be taken, in drinking the water purified, as above described, would only act beneficially. “Condyl’s Disinfectant,” “Darby’s Fluid,” and all the vaunted preparations of “Ozonized water,” etc., are but solutions of permanganates. The salts are cheaper and more reliable than such nostrums, and are now to be readily purchased.

Coal-tar Compounds—Carbolates.—The carbolate of lime has been employed to some extent in camps and hospitals. McDougall’s powder consists of carbolate of lime, sulphite of lime, quick-lime, etc. The Ridgewood disinfectant consists of carbolic acid, protoclchloride of iron, etc., combined with fullers’ earth. Either of these, appear to be quite as valuable as the more expensive article of M. M. Corné and Demeaux’s, which is used at the Imperial Camp at

Châlons, and was found highly serviceable by Barron Larrey, after the great battles of the Italian campaign. Coal-tar, in almost any form, is available for disinfecting sewers, etc., and in the dry powders mentioned, it is available for delaying the process of decomposition, whether in a corpse, or in refuse material. Carbolic acid has the antiseptic powers of creasote, and is largely sold for that article. The antiseptic properties of coal-tar, its effect upon mephitic gases and putrescent material, the permanency of its operation, and the cheapness of the article, render it available for extensive application in neutralizing and arresting noxious effluvia in the processes of animal decomposition. For use in chamber vessels, close-stools, etc., a neat fluid preparation may be made, after the formula of M. Demeaux, by mixing equal parts of coal-tar, alcohol, and hot soft soap. With the progress of knowledge, respecting the chemistry of coal-tar, and other hydro-carbons, the precise value of this class of disinfectants will be better understood. Coal-tar certainly has remarkable efficacy in arresting putrescence and controlling its effluvia.

Heat.—As a means of immediate disinfection of contaminated garments, bedding, and even of close apartments, ships, etc., heat is at once a cheap and most effectual method. The boiling of infected clothing, etc., is admitted to effectually destroy any contagious poison. And practically, upon a large scale in such work, experience proves it is best to employ steam as the means of heating. Upon this subject, see remarks and plans of M. Baudens (*Hospitals and Health of Troops*, Am. ed., pp. 238-234); also, a Report on Heat, as a disinfectant, in the Transactions of the National Sanitary Convention, 1860. It is probable that no circumstance contributes more directly to the perpetuation and spread of the typhus poison, than the accumulation and bad management of contaminated clothing, etc., that ought, under all circumstances, to be purified as soon as it leaves the patient or the bed.

Frost or Low Temperature, when continued a sufficient length of time, will effectually destroy both the miasma that produces yellow fever, and the paludal malaria that produces intermittent and remittent fevers; but such low temperature has no effect to arrest those fevers in the persons suffering from them. It is worthy of note, that a freezing temperature does not appear to mitigate the activity of the personally infectious poisons, or contagions; though, with certain exceptions, it arrests putrefaction and the catalytic or fermentative processes.—*Monograph from Dr. E. Harris, N. Y.*

BROMIDE OF POTASSIUM.—Bromide of potassium has an action distinct from the iodide. It has what may be called an alterative

action, relieving certain forms of chronic disease, as syphilitic skin affections. It exerts a most powerful influence on the generative organs, lowering their functions in a remarkable degree. It, hence, possesses valuable powers in diseases dependent on, and accompanied by excitement or over-action of the generative organs. Sir Charles Locock uses it in hysterical epilepsy, and other nervous affections connected with uterine disturbance. It may be given with advantage in nymphomania, priapism, and in certain forms of menorrhagia. Lastly, it appears to produce an anæsthetic condition of the larynx and pharynx; for this purpose, the salt of potassium acts equally well with the salt of ammonia. Bromides act chiefly on the nervous system, iodide on the mucous membranes and secreting organs. (Dr. A. B. Garrod.)

DEATH FROM CHLOROFORM.—*Cause of.*—It is of very little use watching the pulse in cases in which chloroform is administered, for the first step towards death from chloroform is not from paralysis of the heart, but from paralysis of the diaphragm. It is the respiration, not the circulation which must be watched. The pulse is merely a reflex indication that respiration is right. Fatty heart has nothing to do with death from chloroform; nor does even valvular disease contraindicate its use, as has been shown by hundreds of instances. (Dr. C. Kidd.)

DIGITALIS.—This drug is a tonic, not to the heart alone, but to the organic muscular system generally. It is a most valuable remedy when given in the treatment of dilatation, and is dangerous only in hypertrophy. It, hence, requires to be given with great caution in aortic regurgitant disease. (Dr. Fuller, Dr. Sutton, Dr. Wilks.)

LACTUCARIUM, OR EXTRACT OF LETTUCE.—Lettuce has not been included in the materia medica list of the British Pharmacopœia. It is almost, or quite inert as an anodyne. As much as sixty grains of lactucarium, or extract of lettuce, fail to produce any relief to pain. (Dr. A. B. Garrod.)

READY-MADE PLASTERS.—Boil one hundred or one hundred and fifty grains of starch in one ounce of glycerine. You have now a stiff glutinous compound, which sticks close to the skin, and can be easily removed and reappplied. Instead of ordering belladonna or opium plasters, mix three grains of sulphate of atropia with a few drops of glycerine, and then incorporate it with one ounce of this stiff glycerine ointment, and spread it thickly on gutta-percha cloth or oil-silk. Morphia and other alkaloids can be mixed in the same way. (Dr. Titt.)

SALTS OF MORPHIA.—The hydrochlorate is the only salt of morphia introduced in the British Pharmacopœia, the acetate being omitted. The reasons are, that the hydrochlorate is readily manufactured, forms very beautiful crystals, of a definite composition, and is not liable to change on exposure to the air; whereas the acetate is very difficult to crystalize, and is a salt liable to decompose, to lose some of its acetic acid, and to become much less soluble. (Dr. A. B. Garrod.)

NITRO-GLYCERINE.—Glycerine is the sweet principle of oil, and is extensively used for purposes of the toilet; but it has now received an application of rather an unexpected nature. In 1847 a pupil of M. Pelouze's, M. Sobrero, discovered that glycerine, when treated with nitric acid, was converted into a highly explosive substance, which he called nitro-glycerine. It is oily, heavier than water, soluble in alcohol and ether, and acts so powerfully on the nervous system, that a single drop placed on the top of the tongue will cause a terrible headache, which will last for several hours.

This liquid seems to have been almost forgotten by chemists, and it is only now that M. Nable, a Swedish engineer, has succeeded in applying it to a very important branch of his art—namely, blasting. From a paper addressed by him to the Academy of Sciences, we learn that the chief advantage which this substance, composed of one part of glycerine and three parts of nitric acid possesses, is that it requires a much smaller hole or chamber than gun-powder does, the strength of the latter being scarcely one-tenth of the former. Hence, the miner's work, which, according to the hardness of the rock, represents some five to twenty times the power of the gun-powder used, is so shortened that the cost of blasting is often reduced to fifty per cent.—*Galignani*.

MEDICAL NEWS.

MEDICAL EDUCATION.—The returns of the number of gentlemen now pursuing their professional studies at the metropolitan and provincial hospitals, recognized by the Council of the Royal College of Surgeons of England, have been made to the Government Inspectors of Anatomy, Mr. Charles Hawkins and Dr. Cursham. From these documents it appears, that notwithstanding the recent stringent regulations, requiring a high standard of preliminary education and examination, there is an increase, as compared with last year, in the number of students at the different medical schools in the United Kingdom.—*Lancet*.

MEDICAL DEPARTMENT OF COLUMBIA COLLEGE—COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.—At the fifty-ninth annual commencement, held on the 9th of March, the degree of M. D. was conferred on one hundred and twelve candidates.

THE CHOLERA AT HALIFAX QUARANTINE.—We learn, on going to press, that the steamship *England*, Captain Grace, from Liverpool on the 28th, *via* Queenstown on the 29th ultimo, for New York, arrived at Halifax, Nova Scotia, April 9th, with cholera on board, and that she has been there detained in rigid quarantine. The disease appeared on Tuesday, the 3d of April, when the first case occurred. Since then there were one hundred and sixty cases to the morning of the 9th. Fifty persons died. The ship took out twelve hundred and two passengers, and had a crew of one hundred men. Three doctors went on board from Halifax, and the passengers were to be cared for, some in the hospital ship, and others in shanties erected on the beach. The passengers are mostly Germans and Irish. It is thought that the disease was brought from Germany.—*Medical Record*.

THE CHOLERA has broken out with great virulence on the Rhine, and may be expected to spread over Germany, Holland, Belgium and England, during the approaching summer.—*Ibid*.

THE NEW YORK SOCIETY FOR THE RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN, according to the annual statement for 1865, has 109 members. Its invested funds now amount to \$56,500. Income during the year, \$10,013.87. Disbursements to annuitants, \$1,125.

HARVARD MEDICAL SCHOOL.—The graduating exercises of this school took place at the College, Grove street, Boston, on the 7th of March. Professor Storer delivered the address. The graduating class numbered seventy.

EULOGIES ON DR. MOTT.—The eloquent eulogy lately pronounced by Dr. G. S. Bedford upon Dr. Valentine Mott, before the New York County Medical Society, as well as the one delivered by Professor A. C. Post before the New York Academy of Medicine, is shortly to be published in pamphlet form.

JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.—At the annual commencement, held on the 10th of March, the degree of M. D. was conferred on one hundred and sixty-five candidates.

ASTLEY COOPER PRIZE.—The ninth triennial Prize, of three hundred pounds under the will of the late Sir Astley P. Cooper, Bart., will be awarded to the author of the best essay or treatise on the disease known as "Pyæmia." Candidates must send their essays to Guy's Hospital, on or before, January 1st, 1868, addressed to the Physicians and Surgeons of Guy's Hospital. The Prize is open to the world. We trust that some one of the hospital surgeons of this Country, who have had ample opportunities of studying this disease, may be the successful competitor for this prize.

Medical News and Library.

UNIVERSITY OF PENNSYLVANIA.—The class attending the medical lectures during the session of 1865 '6, was five hundred and twenty, and at the annual commencement, held on the 4th of March, 1866, the degree of M. D. was conferred on one hundred and sixty-five candidates.

RUSH MEDICAL COLLEGE.—The number of students during the session of 1865 '6 was two hundred and ninety-three, and at the commencement, on the 1st of January, the degree of M. D. was conferred on ninety candidates.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF THE CITY OF NEW YORK.—At the annual commencement, held on the 3d of March, the degree of M. D. was conferred on seventy-eight candidates.

BELLEVUE HOSPITAL MEDICAL COLLEGE.—At the fifth annual commencement, held on the 24th of February, the degree of M. D. was conferred on one hundred and seventy-two graduates.

MASSACHUSETTS MEDICAL COLLEGE; HARVARD UNIVERSITY.—At the annual commencement, held on the 7th of March, the degree of M. D. was conferred on sixty-nine candidates.

AMERICAN MEDICAL ASSOCIATION.—The seventeenth annual meeting of this Association will be held in the city of Baltimore, Md., on Tuesday, May 1, 1866.

CHICAGO MEDICAL COLLEGE.—At the commencement, on the 1st of March, the degree of M. D. was conferred on twenty-two candidates.

YALE COLLEGE.—At the commencement in January last, the degree of M. D. was conferred on twelve candidates.

NAPLES.—It is stated that there are about 4,000 Students in Naples.

EDITORIAL.

“*Præstat Naturæ voce doceri, quam ingenio suo sapere.*” “It is better to be taught by the voice of Nature, than to seek wisdom from man’s ingenuity.”

Time, the great touchstone of the currency of Philosophy, has long since declared sterling, this old and classic aphorism of Cicero. Whether reference be made to Poetry or Painting, to Sculpture, to Science, or to History, its wisdom and truth are indisputable.

When the morbid sentimentality of Shelley and Chatterton, are forgotten, “the voice of Nature” will always be acceptably heard, through the pastoral lays of Bloomfield and Thomson.

The chromatic exaggerations of the Venetian School are censured, when enjoying the quiet charm of French landscapes and English sketches; for the elaborations of Paul Veronese and Tintoretto, though magical as art-triumphs, are pleasantly exchanged for the nature-triumphs of Landseer and Lorraine.

The grotesque conceptions of the Phœnicians and Etruscans become spiritless, when contrasted with the inspired marbles of Athens or Rome, and the traveller forgets the mystic attraction of Memnon and the Sphynx, before the Grecian Venus and the Roman Gladiator. The gigantic wonders of Persepolis and Ialmyra and Thebes are surrendered to the Antiquarian, while the true artist learns what is inspiration, before the classic beauties of the Vatican. The weird stone-workers of Amasis and Semiramis furnish colossal embodiments of fantastic conceptions, but the wisdom of sculpture, first finds its voice, in the Nature-types of Polycleetus and Praxiteles.

Science has written its chapters on ocean-bed currents and ocean-bed life, but the deep sea-sounding apparatus of Brooke, brings Nature to give her own testimony, and the truth is first on record, that these currents exist but in imagination; that nothing living disturbs the silence of this submarine solitude, and that the vast area described as being the theatre of insect life, is but a tomb for these denizens of the deep.

Alchemy and Chemistry, have long taught the homogeneousness

of water and ice, but the genius of Tyndall evokes light from this antecedent darkness, and he demonstrates, that "it is better to be taught by the voice of Nature, than to seek wisdom from man's ingenuity;" that where all was believed to be simple and uniform, Nature tells a different story—the story of her stellate beauty and crystalline magnificence.

An inspection of the Earth's strata, confirms the old account of Earth's antiquity, and volumes of unwritten history are there, chapter by chapter, consecutively and continuously recorded. Lyell may be a descriptive master of its physical transformations and periods; Cuvier and Phillips, and Bakewell, may be speculative and suggestive; Buckland and De la Beche, cautious and elaborative; Miller and Brongniart, imaginative and ingenious, but the whole truth of Earth's physical history, Nature alone has written, in her sublime and wonderful phraseology. The inspired writers, and those master-minds, that on the horizon of history, loom up like mountains on the horizon of Nature, have given wonderful revelations of the physical and mysterious Past, but the strata-chronicles of the Earth teach, that while time's age has been correctly recorded, the phenomena of its birth, Nature alone has described; that "it is better to be taught by the voice of Nature, than to seek wisdom from man's ingenuity."

If this be true, in regard to Poetry and Sculpture, and Painting and Science, it is especially true in regard to medicine. The Physician, whose reputation is immortal, and whose writings, time has specially consecrated, is he whose study of Nature was characteristic and untiring. The fame of Hippocrates is principally due to his clinical study of Nature in disease, and to the careful record made of his observations. He specially sought wisdom from this valuable study.

The singular and persistent fable, which ascribed to the arterial tubes the function of air-carriers, vanished on the first careful examination of them.

Harvey, in his sublime faith, wonderful patience under obloquy, untiring energy and admirable independence, made the discovery, which revolutionized medicine; achieving this triumph because he preferred to study Nature, rather than accept the fanciful dogmas of

those regarding his pursuits, as the wild vagaries of an enthusiastic imbecile.

Jenner developed a new future for an entire world, and saved seven-ninths of its population from the horrors of a loathsome disease, accomplishing this result by his masterly use of a single fact, derived from the study of Nature.

The genius of Paré wrought a new era in Surgery, from prompt deductions based upon a few clinical facts.

It were easy to add illustration to illustration, and fortify each example with others more suggestive, but the lesson is always the same; that it is better to seek wisdom, from a study of Nature, than by relying upon the ingenious arguments of men.

A careful record of disease is the Physician's best volume, and his most reliable teacher. It were best to study these pathological manifestations at the bedside; but if this be impracticable, to study the records of those who have enjoyed this great opportunity. True, clinical records are more eloquent of truth, than the most masterly expositions of the library or the lecture-room. The anomalous dangers of sphacelation from blistering, in typhoid disease, are more impressive, in studying the careful record of a single case, than all the generalizations to be deduced from practice or physiology, and the pathological history in regard to an irremovable ball in the pleural sac, is more valuable than all the predictions or dogmas which the Nestors of Surgery have enunciated. Clinical notes, well prepared, are invaluable, for in them are first recorded those masterly deductions from great facts, which are subsequently read in medical works. It is the desire of all, who know the value of facts, to obtain such records.

From information derived, from three of the Departments in Washington, it is unfortunately true, that all of the records in the late Confederate Medical Bureau are lost, and, from those specially informed in regard to them, it is almost certain, that they have been destroyed by fire.

The value of these records—prepared as they were, with great care, by as valuable and distinguished a corps as was ever organized—is inestimable, and it is only to be hoped, that duplicates of most of them may be in the possession of those who originally executed them.

It cannot be doubted, but that there are private duplicates of many of these papers now in existence. *An earnest appeal is therefore made to all who have these papers, or who have valuable clinical materials of any kind, to send them to this Journal, either by mail or express.* Let each paper be given to Science, for, in responding to the request made, there will only be the delays of transit and publication, in distributing all that is valuable to the Professional Public.

The true explanation of the wonderful sagacity and success, surprisingly evinced by many Physicians, with extensive opportunities for observation at the bed-side, while comparative strangers in the library, is, that these gentlemen have carefully studied the clinical language of Nature, rather than the ambiguous and changeable teachings of men. By the *well educated* interpreter, Nature's greatest secrets are often first learned at the bed-side, and the record of these secrets, is suggestive and invaluable.

It is respectfully asked, therefore, that all valuable clinical materials, be forwarded without delay. Let there be the welcome opportunity presented, of offering from these papers, overwhelming illustrations of the great truth, that "it is better to be taught by the recorded voice of Nature, than to seek wisdom from the ingenuity of man."

MEDICAL JOURNALS.—The prospectus of a new series of the "Nashville Journal of Medicine and Surgery" has been received. W. K. Bowling, M. D., Editor and Proprietor; Paul F. Eve, M. D., Assistant Editor. This Journal, with the names of its Editors, is so familiar to the Professional Public, that information and statements concerning them are unnecessary.

The prospectus of the third series of the "Southern Medical and Surgical Journal," Augusta, Ga., has also been received. The work is to be edited by Joseph Jones, M. D. This Journal was established in 1836, and its old readers will learn, with special pleasure, that it is soon to be republished.

The publisher of the American edition of "Braithwaite's Retrospect of Practical Medicine and Surgery" designs adding an appendix, containing a summary of the important medical features

of American journalism, and thus render the work more acceptable to its readers generally. He has engaged A. K. Gardner, A. M., M. D., late Professor of Diseases of Females, in the New York Medical College, well known to the Profession by his numerous popular writings, who will personally edit this additional "Half-Yearly Digest of the Medical Sciences" in the United States.

The publication of the New Orleans Medical and Surgical Journal, the oldest, and, prior to the war, the most widely circulated Medical periodical in the South-west, will be resumed in July, 1866, with No. 1, of Vol. XIX. It will be issued every alternate month, each number to contain about 150 pages, at eight dollars per annum. Drs. Chaillé & Nichols, Editors and Proprietors. Professors Warren Stone, and James Jones, continue as its co-Editors, and among its contributors will be many of the most distinguished Physicians in the South.

The Journal, which Dr. Bennet Dowler proposes to *originate*, is to be styled the New Orleans Medical Journal. The similarity of this title, to that of the old Journal, soon to be republished by Drs. Chaillé & Nichols, is remarkable.

NOTICES.

D *F* ACCORDING TO THE PUBLISHED TERMS of this Journal, all subscriptions will be doubled, if unpaid three months after the date of the original subscription order. Subscribers, know, each, the date of the order given, and will govern themselves accordingly. It is hoped that the Publishers will not be compelled to enforce these terms, in regard to any one.

D *F* THE RICHMOND MEDICAL JOURNAL COMMISSION, organized for the purpose of examining models of all Artificial Limbs made in America, has been convened in this City. The Commission will be in session, probably, ten or twelve days, and the result will be generally published, for the guidance and benefit of all relatively interested.

 MONOGRAPHS, Pamphlets, Circulars, Reports of Institutions, etc., will be printed with neatness and dispatch, and at the lowest rates, at THE RICHMOND MEDICAL JOURNAL OFFICE.

 ADOPTING THE POLICY of the London Lancet, and other European periodicals, the Advertisements in this JOURNAL, will constitute both a prefix and appendix to the Work.

MATRIMONIAL.

Married, in the City of New Orleans, April 5th, 1866, by Rev. J. W. Beckwith, Rector of Trinity Church, Dr. L. H. PROSSER, of Woodville, Miss., to Miss CLARA L. JUVELL, of the former place.

Married, at "Junction," Botetourt County, Va., on the 16th day of January, 1866, by the Rev. Rowland Doggett, Dr. CYRUS DOGGETT and Miss BELLA E. MATS, daughter of F. H. Mays, Esq.

MORTUARY.

SHACKERLY, ISAAC F., M. D. Brooklyn, April 20, 1866.

FROST, HENRY R., M. D., Charleston, S. C., April, 1866.

MAUPIN, HENRY B., M. D., Cabell C. H., W. Va.

SMITH, JOSEPH M., M. D., New York, April 22d, 1866.

BOOKS, JOURNALS, Etc., RECEIVED.

Recent Advance in Ophthalmic Science. By H. W. Williams, M. D. Boston. Ticknor & Fields. From the Publishers.

The Application of Sutures to Bone in Recent Gunshot Fractures, with Cases: also, Remarks on their Similar Use in some other Fractures and Operations. By Benjamin Howard, M. D. From the Author.

The Special Treatment of Syphilis, Chronic Rheumatism and Scrofula. By E. J. Goodwin, M. D. Gary & Olenmitt. Richmond, 1866. From the Publishers.

Annual Circular of the Medical College of the State of South Carolina. 1865-6.

The Transactions of the New York Academy of Medicine; containing the Induction of Premature Labour. By Geo. T. Elliot, Jr., M. D. Bailliere Brothers. 1866. From the Author.

A Treatise on the Principles and Practice of Medicine; Designed for the use of Practitioners and Students of Medicine. By Austin Flint, M. D. Philadelphia. Henry C. Lea. 1866. From the Publisher.

A Practical Treatise on Urinary and Renal Diseases. By Wm. Roberts, M. D. Philadelphia. H. C. Lea. 1866. From the Publisher.

Catalogue of the Kentucky Military Institute. 1866.

The Pacific Medical and Surgical Journal. April.

Medical News and Library. April.

London Lancet. April.

Boston Medical and Surgical Journal. April.

Chicago Medical Journal. April.

Philadelphia Medical and Surgical Reporter. April.

St. Louis Medical and Surgical Journal. April.

Canada Medical Journal. April.

American Journal of Pharmacy. April.

Buffalo Medical and Surgical Journal. April.

American Druggist's Circular. April.

Hall's Journal of Health. April.

The New York Journal. April.

Dental Cosmos. April.

The Memphis Medical and Surgical Monthly. April.

The Cincinnati Journal of Medicine. April.

The Galveston Medical Journal. March.

The Atlanta Medical and Surgical Journal. April.

New York Lancet. April.

St. Louis Medical Reporter. April.

Savannah Journal of Medicine and Surgery. April.

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WRIGHT & SIDDALL,

Druggists and Chemists,

No. 119 Market Street,

my 1866—1y.

Philadelphia.

The Richmond Medical Journal.

JUNE, 1866.

ORIGINAL COMMUNICATIONS.

ART. I.—IMPROVEMENTS IN THE PHARMACY OF FLUID EXTRACTS.
By A. J. SEMMES, M. D., Visiting Physician of Charity
Hospital, New Orleans.

In a late communication to this JOURNAL, attention was directed to the character of the fluid extract of buchu, as prepared in the laboratory of the New Orleans Charity Hospital, under the intelligent charge of W. H. Laster, one of the most practised Pharmaceutical Chemists in the Country. Mr. Laster has devoted much time and consideration to the practical methods of preparing all of the fluid extracts, in the American and British Pharmacopœias, and has been enabled, with the coöperation of the Medical Staff of the Hospital, to demonstrate the pharmaceutical importance, and the therapeutic advantage, of some of these extracts, when made according to a process in use at this Hospital.

Fluid extracts are solutions of principles, as they exist in vegetable substances, or the principles may be dissolved in a modified form, or combination, different from that of the crude material. This change is made to increase, or otherwise influence, the medicinal effect; to insure permanence in the preparation, or to render the principles more soluble; and thus increase the facility of extracting the soluble parts of the substance.

In the preparation of fluid extracts, it should be the aim of the operator, to extract, thoroughly, the active principle or principles of the crude substance, and to avoid the solution of certain princi-

ples that are not only useless, but injurious to the permanence of the preparation ; such as albumen, gluten, casein, pectin and gum, which, if dissolved or even suspended in a liquid, rapidly induce change.

Now this exclusion can be accomplished by the use of menstrua, in which the above named principles are insoluble, or by the process of clarification, in which heat renders several insoluble ; thus in a substance containing an alkaloidal principle, and gummy or albuminous matter, alcohol, as a solvent, will extract the first, and leave undissolved the remainder. But it may be necessary to use water as a solvent ; in this case, the gum and portions of the albumen and pectin will be also dissolved if present, but they may be completely separated by clarification, in which heat renders the albumen completely insoluble, and mixing the strained liquid with its own bulk of strong alcohol, which precipitates the remaining principles, the alcohol may be recovered by distillation from the fluid.

The fluid extracts are deservedly classed among the most important pharmaceutical preparations, and it is only within a few years, that this position has been accorded to them. I have thought their sphere of usefulness might be extended by increasing their number, for almost all substances of the *materia medica*, may be prepared in the form of an extract. These preparations may be substituted for a class of tinctures, decoctions, infusions and syrups, which are objectionable on account of their stimulant action, and their liability to rapid deterioration. These are serious objections, in the eye of the Physician, as well as the Pharmaceutist. By the use of this class of extracts, the Physician can eliminate a number of preparations, thus objectionable, and the Pharmaceutist, by modifying their preparation, can ensure permanence, while but a short time is required for their preparation. Take the preparations of seneka root, for example ; the U. S. Pharmacopœia admits a decoction, an infusion, and several syrups, containing seneka as a component. Of these preparations, the syrup of seneka is least objectionable, but in the climate of the Southern Gulf States, all of them rapidly deteriorate ; the decoction and infusion cannot be kept longer than twenty-four hours, and the syrups ferment in several weeks. Mr.

Laster states, and every practical Pharmaceutist would support his assertion, that there is not one stable preparation of seneka in the U. S. Pharmacopœia. How can this inconvenience be remedied? It may be done in this manner. Prepare a fluid extract, of which, a certain measure shall represent a known weight of the seneka. This extract can be employed in the preparation of, or substituted for the ordinary forms of seneka. The following are practical rules recommended by Mr. Laster, to be observed in the preparation of this, and other extracts of a similar nature, the success of this process depending, to a considerable extent, upon the comminution of the substance. In the case of seneka, it succeeds best when the substance is finely powdered.

As a solvent, none has fulfilled the purpose better, than a mixture of alcohol and water, in the proportion of three parts of the former, to one of the latter; the powder, in every instance, should be previously macerated with a portion of the menstruum. Seneka, in the process of percolation, should be lightly pressed in the instrument, otherwise it cannot allow the liquid to pass readily. In the menstruum used, the active principle of the seneka, senegin, or polygallic acid, is readily soluble, and inert substances as pectin, albumen, gum and cerin, are excluded; the presence of one or other of the latter, in the ordinary preparations, being the cause of their instability. The evaporation should be conducted by means of a water bath, as the direct application of heat injures the preparation. The vaporization proceeds speedily, at a temperature of 160° to 200° Fahrenheit. When this step of the process is completed, it remains to filter the liquid when cold, and finally, to dissolve the sugar.

The following is the formula employed by Mr. Laster, in the preparation of this extract, and a class included under this head:

R _x	Seneka,	-	-	-	-	-	5 xij (12.)
	Water,	-	-	-	-	-	0 j (1.)
	Alcohol,	-	-	-	-	-	0 iij (3.)
	Sugar,	-	-	-	-	-	3 viij (8.)

Reduce the seneka to a fine powder, and moisten it with twelve fluid ounces of a mixture of the water and alcohol. Press the moistened mass lightly and evenly, in a conical glass percolator,

and pour on the menstruum, until three and a half pints are obtained. Evaporate this liquid by a water bath, until reduced to eight fluid ounces; filter when cold, and dissolve the sugar, with a gentle heat. To each fluid ounce of the extract, when cold, add one half of a fluid drachm of alcohol, and water sufficient to make the preparation measure twelve fluid ounces.

We can, according to this formula, prepare fluid extracts of *krameria*, *matico*, *sarsaparilla*, *spigelia*, *chimaphilla*, *dulcamara*, *galla*, *hæmatoxylon* and *uva ursi*.

Fluid extracts, thus prepared, have been kept by Mr. Laster, over two years, in the Laboratory of the Charity Hospital, and at this moment there is not the slightest appearance of decomposition. The advantages of this class of preparations, consists in their permanence, concentration, the absence of useless and injurious substances, which are present in the crude material, and, finally, in faithfully representing the medicinal properties of the vegetable, from which they are extracted. This property is most excellently shown, in the extracts of *krameria*, *spigelia*, *senna*, *sarsaparilla* and *matico*.

The quantity of alcohol used in the preservation of this class of preparations, is so minute as hardly to form a valid objection to their internal use.

Substances containing alkaloids, or other active principles, insoluble, or with difficulty soluble, in water, or other menstrua, can be extracted by the use of water, or diluted alcohol, acidulated with muriatic or acetic acids; the former acid is preferable, as the muriates of vegetable bases, have been found by Mr. Laster to be the most soluble. Nor are muriates decomposed by heat, as are the vegetable acetates, which readily part with their acid when in solution, undergoing the process of vaporization. A fluid extract of *cinchona* may be prepared according to the following formula, representing in a concentrated form, the properties of the bark:

R _y .	<i>Cinchona Calisaya</i> ,	-	-	-	3 xx (20.)
	Water,	-	-	-	0 iij (3.)
	Muriatic Acid,	-	-	-	5 iij (dr. 3.)
	Alcohol,	-	-	-	3 iv (4.)

Powder the *cinchona* coarsely; then mix the muriatic acid with

one pint of water, and pour the mixture upon the bark, in a proper vessel; at the end of twelve hours, introduce the powder into a glass percolator, pressing it very firmly. Percolate with water, until three pints of liquid are obtained; evaporate by a water bath, until reduced to one pint; when cold, add the alcohol, and filter.

In the above process of Mr. Laster, the cinchona, in a proper state of comminution, is moistened with very dilute muriatic acid, which is sufficient to decompose the salts of quinia, cinchonia, quinidia and cinchonidia, as they exist in the calisaya, converting them into muriates. In this state they are dissolved in the water, together with the colouring matter, cincho-tannic acid and bi-kinate of lime. The last substance existed as a kinate, but is converted by the acid into bi-kinate, by the withdrawal of one equivalent of its base. Mr. Laster's next step is the process of percolation, in which water is used as the menstruum, after the action of the dilute acid; used in this manner, the water thoroughly and rapidly extracts the soluble principles of the bark. When the extraction is completed, the percolate is evaporated and mixed with the alcohol.

This extract is of a dark colour, when seen in large bulk, but in small quantities, appears of a ruby red color. Its taste is purely bitter, scarcely acid, and strongly recalls that of calisaya. It is miscible with pure water, syrup, and mucilaginous liquids. Its incompatibles are the same as those of quinia.

According to the above formula, may be prepared a fluid extract of the leaves and root of aconite, belladonna, stramonium, lobelia, opium, sanguinaria squill, cornus and seed of colchicum, and other substances of like nature. A class of fluid extracts, or as they are termed, "preserved juices," are prepared, in localities where the plants can be obtained in a fresh state, by expressing the juice, and preserving it by the addition of alcohol. This class of extracts, from the presence of albuminous and gummy substances, requires a larger proportion of alcohol for their preservation, than those that have undergone the process of clarification. After the addition of the alcohol, Mr. Laster recommends that the juice be allowed to rest several days, for the precipitation of certain substances, as woody fibre, gummy matter, albumen, &c. When this

deposition has taken place, the liquid may be strained through close flannel or linen.

These extracts were first introduced in England by Mr. Bently, a pharmaceutical chemist, and prominent among the class, may be mentioned the extracts of aconite, belladonna, conium, hyoscyamus, colchicum and taraxacum. Very flattering opinions have been passed upon them by the Medical men of Europe, who have tested them.

In the preparation of these extracts, no heat being employed, there is no danger of injury to the active principle, as there is in the ordinary form of solid extract; for the changes produced by heat in evaporation, is the chief cause of the variable and uncertain nature of the solid extracts, and the means of avoiding this injury has been at all times a great object to the scientific pharmacist.

The fluid extracts of Mr. Bently, may be employed in the preparation of tinctures, syrups, and other preparations; and by concentration in vacuo, they can be converted into a very superior solid extract.

Plants containing volatile constituents, or those readily alterable by heat, when used in the preparation of fluid extracts, are exhausted by alcohol or ether, and in some few instances, a mixture of both liquids accomplishes the object speedily and effectually. In preparing the fluid extract of valerian, Mr. Laster uses ammoniated spirit as a menstruum, which answers a good purpose, by rendering the valerianic acid less volatile, and at the same time, completely dissolving the oily matter.

The liquids obtained by percolation, should be evaporated spontaneously, or if heat is used, should never exceed 100° F. Even at this temperature, there is loss of volatile matter, if the process continues any length of time.

The fluid extracts of this class, according to the last edition of the U. S. Pharmacopœia, are nothing less than highly concentrated tinctures, and the presence of the amount of undiluted alcohol forms a most patent objection to their internal use. True, we may say they are powerful agents, and designed to be administered in minute doses, and the quantity of alcohol, when thus used, produces no ill effects; but these extracts are exhibited in some

diseases for a length of time, and again in others, which do not admit of the use of alcohol in any form. These are valid objections, and the class of preparations will remain imperfect, until some material is used to replace the alcohol, or until the amount is greatly reduced. Mr. Laster's mode of preparation removes all of these objections. In most instances, the quantity of spirit may be reduced one-fourth, and yet the stability of the extract remain unimpaired. The processes herein described, are entitled to the entire confidence of all using these valuable medicinal agents.

ART. II.—PROLAPSUS ANI, WITH PROCIDENTIA UTERI OF TWENTY-SIX YEARS. By F. B. WATKINS, M. D., Richmond, Va.

Mrs. H.——, age 64, of leucophlegmatic temperament, emaciated and exsanguineous, on the 13th day of December, 1865, experienced a very complete prolapsus ani, while suffering from a slight dysentery. I saw her, for the first time, on the 15th. After various and frequent, but ineffectual efforts at reposition, during the 48 hours, all of which irritated the prolapsed organ exceedingly, I found her in the following condition :

The rectum everted and protruding fully six inches in length and twenty-four lines in diameter. The mucous membrane highly engorged, cherry red, dry, hot, and exquisitely sensitive. The most gentle manipulation, occasioned great suffering. The sphincter ani, grasping the everted rectum with great power, and stimulated to involuntary movement, by the presence of this (now) foreign body, doubtless augmented the capillary congestion, and aggravated the suffering. Several large hemorrhoidal tumours, which appeared only after the reduction of the prolapsion, added a complication, which rendered the pain more intolerable.

The highly engorged and irritated membrane, its constriction by the sphincter, the hemorrhoidal presence, the excessive tenderness, and the length of time since the prolapse, added to the increased irritation from the frequent and ineffectual attempts to relieve it, led me to apprehend some trouble in the reduction of the dislocation painlessly. The main impediments in the way of the accomplishment of this purpose, were the excessive irritability, (which not only

forbade the most cautious and gentle minipulation, but instantly set up great activity in the sphincter, upon the gentlest touch,) and the bulk of the mass. In order to mitigate the one, and diminish the other, the first and obvious indication was, to abate the excessive congestion, and as much, and as speedily as possible, to relax the sphincter. By so doing, not only would the great sensibility be alleviated, but the bulk of the mass reduced. How most promptly to do this, was the practical question.

The books direct the patient to be placed on the back, the shoulders elevated, and the knees drawn up, or on the side. Let it be remembered that these are the true obstetrical attitudes, and adopted, in order to secure the greatest, and most efficient degree of the expulsive forces. But, it occurred to me, this is just the last force I wish to encounter, since the purpose was, not to expel, but to reposit, and I should be much relieved to discover the very best antagonisms to these expulsive forces. Nothing presented itself, so promising of hope, as the position now to be described, viz :—to place the patient on the knees, and the face brought so flatly to the surface of the mat-trass, as that one of the shoulders should be a point of support during this otherwise fatiguing position. This would secure for me a very steep inclined plane; the viscera would gravitate from the pelvic cavity and neighbourhood, and some traction would, thereby, be applied to the everted rectum, (slight I admit, but a little help not to be despised). Again, by this position, we may hope for some relief of the hæmostasis of the hemorrhoidal vessels; another point to be gained in the relief of the capillary congestion. But most of all, I was sure, from experience and observation, I should secure the relaxation of the sphincter ani, “a consummation most devoutly to be wished.” These helps commended themselves to my consideration, and were adopted.

The patient was placed in the position described, supported by an assistant, ordered to avoid all straining effort, and to breathe naturally. I say, just here, I have constantly resorted to the expedient of engaging the patient in conversation, whenever, in attempting to replace a retroverted uterus, she was disposed to *bear down*, contrary to orders. I have placed women in this position, as one cannot talk, and *bear down* very well, at the same time. After resting

a moment, cool irrigation was applied, and under the influence of that, and the attitude combined, a rapid and most gratifying subsidence of the congestion supervened. So prompt was this alteration, and so rapid was the diminution of the bulk, I determined to delay the reduction until all the best results could be obtained. The point was reached, I thought, when I could painlessly handle the protruded portion. Then oiling, thoroughly, the part, and finding a fissure-like line, at which the opposing sides of the rectum would indicate the direction to its cavity, I passed the index finger into the rectum and very easily returned it to its place, by steadily pushing the whole mass before the thumb and fingers of the same hand, held in position of semiflexion. So painless was the reduction, that the patient exclaimed, "Doctor you hardly hurt me at all." As anticipated, I found the sphincter thoroughly relaxed, and seeing, for the first time, the hæmorrhoidal tumours, they were at once passed within and beyond the action of the sphincter, and the woman ordered to lie down. But, to my surprise, for she had given me no intimation of such a calamity, in the act of turning, my eye rested upon an enormous tumour extruded from the vulva, pendent between the thighs, which I recognized as a procident uterus. I was tempted to essay its reposition, while I had the patient in attitude; but remembering I had no appropriate means with me, and deciding it to be desirable all rectal irritation should subside, in order to escape the inconvenience of tenesmic action, she was placed on her back, the thighs extended, and ordered to remain quiet, and to evacuate the bladder and bowels only while in decubitu. She continued to do well, and as soon as it was ascertained that all rectal irritation had subsided, and the sphincter returned to its normal state, it was determined to attempt the reposition of the uterus.

The history of the case, so far as obtained, is this. Twenty-six or seven years ago, soon after her second accouchement, while making some unusual exertion, she experienced, very suddenly, an acute pain, followed by a very harassing tenesmic action of both bladder and rectum. Then followed those ordinary symptoms, commonly incident to just such a case, running through long years, but all pointing to an immediate prolapse, which finally ultimated in the

condition, in which I found her. During the wretched years which had dragged their weary length along, after resorting to a thousand and one worthless remedies, she, years ago, persuaded herself to the final desperate resolve, to rest content and to be as little wretched as possible, without further effort at, or hope of relief. With much persuasion and many promises, she reluctantly consented to one more effort, for her comfort.

In procidentia uteri, it is to be borne in mind, that it is the vaginal, and not the uterine tissue, which presents externally. It is, so to speak, the uterus invaginating the vagina, and in its extrusion everts the vagina, and is enveloped in its membrane. True, the cervix uteri is exposed, but this cervix is the only portion of the uterus which is seen or handled. The vaginal mucous membrane, then enveloping the whole body and fundus of the uterus, had been exposed to the action of the light and atmosphere, and was an instance of the interesting physiological fact, of the almost complete identity and convertibility of the mucous and dermoid tissues; "mutatis mutandis," etc. There was not the slightest evidence of the exposed mucous membrane, being mucous membrane by reason of any secretion; it was dry, harsh, and rugose. Just at the posterior face, at the point of departure from the perineum, there was a sort of undefined, mixed mucous, and dermoid tissue, engorged and slightly abraded. Nowhere else, did there appear any sign of departure from health. The os tincæ was plainly visible, and she informed me that during the whole catamenial life, the menstrual function had been normally performed.

After as exact an examination as could be made by taxis per rectum, and weighing all the probabilities and contingencies touching the question of adhesions and irreducibility, the attempt at reposition was determined upon.

After voiding the rectum and bladder—placing the woman in the attitude just indicated, in order to secure the evacuation of the pelvic cavity, by reason of the gravitation of the viscera—keeping in mind the line of the vaginal axis, and having thoroughly oiled the parts, the cervix (held firmly between the thumb and fingers) was gradually pushed back in the line of the axis. (I have neglected to relate the dimensions of the mass. Instead of being two and a

half inches long, and one and a half broad—the average dimensions of an unimpregnated uterus—it was about five inches long and three broad.) Hoping and believing no adhesions had occurred, no hesitation was felt, to proceed boldly in the work. Grasping the cervix and driving it along, the density and thickness of the vagina, at its point of attachment to the cervix, at once arrested my attention. I suppose it was fully three or four lines in thickness. Being satisfied of the feasibility of the reduction, prudently avoiding any undue or unsafe efforts, the whole mass was steadily and boldly pushed back; gradually and satisfactorily retiring, until it completely disappeared. Once within the ostium vaginae, the reposit of the uterus was easy. The patient made very little complaint of pain.

The success, though complete, the work was not yet finished. In order to retain the uterus in situ, the restored vagina must be maintained at its normal length, and the possibility of a recurrence of the procidentia must be prevented. The propriety of this theory of relief, will be recognised, when it is remembered that procidentia uteri cannot possibly occur, unless the vagina be everted, and if the vagina be retained at its normal length, and in the pelvic cavity, the uterus itself must be found at the posterior extremity of the canal. Nothing promised so much as a large ring pessary, with its posterior segment resting in the cul de sac vaginae, and its anterior segment supported by the pubis. A ring pessary, of three and a half inches in diameter, as stubborn as was consistent with a proper elasticity, was adjusted. Such an adjustment seemed to preclude the mechanical possibility, that the uterus should again procide. Unfortunately, the pessary was so badly constructed, the gutta percha peeled off, and left the metallic spring exposed, which very soon occasioned much irritation at the points of support, necessitating its immediate removal. This she did for herself, in my absence, and the procidentia instantly recurred.

The whole work of reposition must be again effected. Being now fully assured of the reducibility of the displacement, the patient was again placed in attitude, and with less caution and timidity, the uterus was promptly reposit. The size of the ring, in order to protract the vagina sufficiently, was obnoxious to the objection of

permitting the uterus to descend too low on the floor of the vagina; and although the procidentia was relieved, the inconvenience of a prolapse existed. It was not unfortunate, as it turned out, that the removal of the ring became necessary. So, after the reduction of the dislocation, a glass globe, of three inches diameter, was, with some difficulty, introduced. The important fact, of the great change in the topographical anatomy of the vulvar and perineal regions, was regarded. The immense thickening of the vaginal wall suggested the necessity of introducing as large a globe pessary as possible, not only for the purpose of retaining the uterus in situ, and to render the recurrence of the procidentia impossible, but also, under the action of physiological law, by pressure, to promote the absorption of the hypertrophied tissue, reduce it to its normal status, and favour its speedy reconversion to legitimate mucous tissue. For this reason, the large globe was selected, which, in the sequel, afforded abundant confirmation of the propriety of the convictions.

In order to secure the best results, and escape the contingency of an immediate reprocidentia, the patient was directed to lie in bed for several days. Apprehending the possibility of risk of displacing the globe, by the passage of indurated fæces along the rectum, such a course was ordered, as should keep the bowels in a soluble state.

Before leaving the bed, a simple T bandage was applied, furnished with a firm elastic perineal pad, and the whole bandage drawn as tightly as could be comfortably worn. The perineal pad was suggested, under the reflection, that during the long years, the procidentia had existed, there must be much relaxation and atonicity; and it was a matter of prime importance, to afford such artificial aid to the perineum, as would supplement its faulty and failing power.

It is apposite to say here, that the perineum, while in a normal condition, is of essential value in the support of the vagina and uterus. Its power to resist their descent will be appreciated, when it is remembered how mighty it is sometimes to antagonise the furious expulsive throes of the uterus; in such a case as the one under consideration, it is not idle and vain theory to conserve its force, for it may be made to perform most valuable offices, when resort is had to artificial supports. This fact suggested the idea, to furnish the perineal strap with the cushion pad.

After a week, finding that the globe continued to remain well adjusted, suffering no dislodgment by the evacuation of rectum or bladder, and that this extempore Landage might be trusted, the patient was allowed to walk.

Thirteen weeks have elapsed, and the globe continued well in place. The condition of the poor woman was so much improved, that when I last called to see her, she had walked several squares. Is there not ground for confidence, and almost assurance, that in the course of months, if the uterus shall be properly sustained, and the vagina restored to its healthy state, and the perineum reëstablished in its normal tonicity, that the globe may be retained without the annoyance and vexation of the bandage? There is no hope that she will ever be able to dispense with the internal support afforded by the globe. Her age, and the long existence of the procidentia, promise little help from the restored elasticity of the ligaments. One consideration alone suggests a feeble hope. At her age the uterus will obey its physiological law, become atrophied, and under the influence of atrophy and restored perineal force, the internal support may be no longer necessary. In any event, if the globe shall continue to subserve the purpose permanently, as well as it has done, and is doing now, after a lapse of thirteen weeks, it is a matter of no moment, if it remain en permanence.

It behooves me to speak diffidently, and I do so unaffectedly. I defer, with great respect and consideration, to the authority of gentlemen more skilled and experienced than myself. This case, in this surgical era, would, in the hands of an expert, call for the knife and the suture. Medicine, like every thing else, has its ages and eras. This is its surgical. What a beautiful opportunity! What a temptation to the heroic! How much more reputational to cure by the knife, than by the pessary! But conservative Surgery has a voice which shall not be stifled. It cries, "Withhold the knife a little longer!" It is questionable if that great boon of the Nineteenth Century, anæsthesia, with all its blessings, is really a boon or a curse. Under its painless and facile convenience, how many dismemberments have been expertly and artistically effected, which, without it, conservatism would have condemned! But it is hard not to be brilliant, when one can. But I digress.

I have been beguiled into this train of reflection from observation, that so many awkward and clumsy contrivances in the shape of elastic pessary, intra-uterine pessary, pessary en lilloquet, et id omne genus, have been thrown upon the market to sell, where the simpler and inexpensive agencies, equally or more valuable, are condemned and whistled down the wind! And again, by the observation, that mechanical autoplasmic surgery seems insatiable and clamorous, even when conservatism is equally or more sure and safe.

One word more and I have done. Procidencia uteri ex-necessitate rei involves the fact of prolapsus vaginae, and the relief of the one is the cure of the other.

ART. III.—ON THE COMMUNICABILITY OF SYPHILIS BY VACCINATION.
By WM. M. FUQUA, M. D., Appomattox Co., Va.

On assuming charge of the Seventh Florida Regiment, late C. S. A., as Medical officer, I found fifty-two men who had been recently vaccinated, suffering from severe ulcers on their arms, at the site of vaccination. Some of these ulcers had scabbed, and to all appearances seemed to promise a speedy "return to duty." There were others, varying in size from that of a quarter of a dollar to that of a Mexican dollar. Their edges were hard, shining, and everted; in some few cases they were undermined. An ashy coloured slough covered their base, which was from time to time cast off. This, however, was not always a genuine slough, but a tenacious grey and partially organized exudation. These ulcers were offensive, and discharged pus freely. The redness, circumscribing them, was limited, the limb but little swollen, and the pain of a burning, stinging character. In many instances, the lymphatic vessels were much inflamed, and the axillary glands, in each case, were more or less affected. Many of these patients complained of pain in their limbs, there was some febrile excitement, and their appetites had been much impaired. Having thus briefly described these ulcers, it may not be improper to remark upon the hygienic condition of the regiment.

At this time, it was doing duty at Knoxville, in the department of East Tennessee, and was quartered a mile from town, upon soil which had been previously occupied by troops, who had left the

encampment in no praiseworthy condition. To the South, South-West, and West passed the Holston river. The general health of the command was bad—the sick list comprising one-seventh of the command. The prevailing diseases were the malarial fevers and acute diarrhoea.

The first part of the treatment of these cases, consisted in their removal to a more cleanly, and healthful locality; cleanliness of person and clothing was enjoined also. General directions were given as regards diet, and of maintaining their bowels in proper condition. The second part of the treatment was the local application of astringents in the milder cases, and escharotics, varying from the mildest kind to that of the most potential, in conjunction with the astringent lotions in the severe ones. Under this regimen, some few improved; none, however, recovered; by far the greater number grew worse. Abscesses now began to form in the axillary glands; pain in the limbs and joints increased in severity; there was a sensation of dryness in the throats of many, which was speedily followed by ulceration. Our apprehensions were now fully awakened; each day we inquired more and more diligently for some new symptom which might be diagnostic. Coppery coloured spots, now appeared upon two; the hair began to fall off in a third, and it was not a week before a syphilitic bubo, in its incipient stage, appeared in another. Heretofore, these cases had been denominated “spurious vaccination.” Spurious they were, in one sense; but specific in another, in the strictest acceptance of the term.

It is hardly requisite for me to state, that these cases were placed upon syphilitic treatment, and we had the satisfaction, in comparatively short time, of seeing the greater number of them returned to duty. A few were sent to the general hospital, one of whom died.

In conclusion, let me remark, that having mentioned to Dr. Frank Ramsey, then Medical Director of the Department, the nature of these cases, he requested me to make a report in detail concerning them, which was done, and in all probability found its way to the late Surgeon General's office.

Upon inquiry, it was definitely ascertained, that the virus for inoculating these patients was obtained from a sailor on the coast of Florida, who laboured under primary syphilis at the time of vaccination.

MEDICAL AND SURGICAL RETROSPECT.

I.—THE INFLUENCE OF RAILWAY TRAVELLING ON PUBLIC HEALTH.
By the London Lancet Commission.

The concluding passages of this long and elaborate report will serve to show, that the "Commission" is disposed to take an unfavorable view of the influence of railway travelling upon public health. Thus:

"The efficiency of the rapid concussions, incidental to railway travelling, in developing or aggravating epilepsy, chronic spasm, cerebral softening, and spinal softening, has been studied, not by the light of vague conjecture, but upon the authority of strictly observed cases in the practice of men, such as Sir Ranald Martin, Dr. Brown-Séguard, Dr. Radcliffe, and others. The particular influence of cold and draught has been placed in necessary juxtaposition with the exact inquiries as to ventilation and relative purity of the air in railway carriages, by Dr. Angus Smith. The nature of the impressions, so well studied by Sir David Brewster, has been traced to its pathological consequences by Mr. White Cooper. Dr. Fuller's ingenious observations on the part played by the auditory nerve in conveying to the brain strong and incessantly repeated impressions of sound, are of a practical and suggestive character. This is, no doubt, one cause of the peculiar effects of continued railway travelling, which had not been well known, and of which the mischief is preventable. The almost certainty with which a long railway journey will, in some pregnant women, produce abortion, has been well illustrated in the communication by Dr. Meadows and Dr. Graily Hewitt. The acceleration of the pulse in railway travelling is one of the indications of the extent to which this form of passive exercise taxes the system; but all physiological deductions require to be received with great reservation, as the disturbing elements are so many and various.

"There are only two classes of persons especially likely to be injuriously affected by moderate railway journeys, even though frequent: they are persons advanced in life and of weakened power, and those who are subject to the special diseases which have already been studied in this relation. The actual exertion, the excitement, the mental strain, the peculiar influences of the motion of a railway carriage, indicate its dangers to those first mentioned. These constitute a small minority. But there are a number of persons who, although not far advanced in age, are yet the subjects of

various conditions of ill health, depending on insidious degenerative disease of the brain and heart. The season-ticket holders of the railways are, in large numbers, men who have passed the best years of their life, in hard and exhausting employment of mind and body. They are the successful merchants; the senior partners of flourishing firms which they have built up by a life of labour; half-retired tradesmen; half-invalid bankers, *et il omne genus*. We can now see that it is by the injuries which have resulted to these men, from their constant travelling to and from town, that an impression has become current as to certain mischiefs which habitual travelling inflicts. When it is stated that such a banker, who comes up fifty miles three or four times a week has to lie down half an hour before he can sign a cheque; that such a well-known chemist has suffered from symptoms of brain excitement, since he bought his new house by the sea, and travelled daily to London; or that a certain barrister has found himself obliged to pay for his journey by epileptic seizures, the alarm soon extends beyond reasonable limits. But few men can endure, without suffering, to travel fifty or a hundred miles daily to their business, for any length of time. The influence of the journey itself is heightened by many accessory conditions to which we have adverted: and the present construction of the rails and carriages is such, as to deprive the traveller of all those mitigations, by which his discomfort might be diminished and his health safe-guarded.

“Amongst the unprecedented collection of cases brought under notice, during this inquiry, there have been recorded several of serious mischief, and even death, from persons in ill health hurrying to catch trains, and sitting down heated and breathless, in the draught caused by the moving of the train, which they have just managed to be in time for. It is almost exclusively at large termini, that these cases have occurred, and that the cause of them obtains. Now, this rushing in at the last moment, we are informed, is becoming more frequent; and consideration of the condition in life of those who constitute the majority of season-ticket holders, would indicate how this evil arises. We believe it would be advantageous to public health and safety, however harsh it may at first appear, that the doors at termini should be closed five minutes previous to the departure of each train, so that sufficient time should be allowed for passengers to quietly settle themselves, and also for the officials, who are often (as one of them graphically expressed it) “torn to pieces,” just at the last moment. It is well known, that the difficulties with luggage, which this arrangement would obviate, are frequently causes of delay in starting trains. Then there is high speed to make up lost time, or want of punctuality, both of them fraught with danger to passengers.

"It has been shown, that the injurious effects which habitual railway travelling produces, on some who escape such influences, when only taking occasional journeys, are very marked. In such persons, health's continuance comes to be a cause of disease. In some, there have been no previous symptoms, that they could recognize, or such as would have deterred them from undertaking the daily journey; and thus the season ticket is taken, and has soon to be disused. In all cases, the evidence points to the conclusion, that the injurious influence slowly and gradually increases, while the cause remains—that tolerance is not established by persistence.

"It is too much the custom, when adopting a country residence on a railway line, to make no arrangements of business, according to the diminished time for work, which the daily interval between the morning and evening trains allows. Hence that hurry, anxiety, and working of the brain at high pressure, which, of all things, tends to develop, in susceptible persons, such injurious effects on health, as habitual railway travellers often experience. But we believe, that no person is justified in undertaking a series of continuous journeys by rail, under the conditions alluded to, (if under any circumstances,) without previously consulting his medical attendant, as to their probable effect on his health, the precautions he should adopt, and the warning symptoms, which he may not safely disregard."—*Lancet*.

II.—ON ACUPUNCTURE IN MUSCULAR RHEUMATISM, AND ON GALVANISM IN RHEUMATIC PARALYSIS. By DR. LEARED, Physician to the Great Northern Hospital.

"Several years ago," says Dr. Leared, "I was consulted by a lady for rheumatism, the principal seat of which appeared to be the right deltoid muscle. It was attended by considerable loss of power, and the severe and constant pain had seriously impaired the patient's health. Hearing that a number of approved remedies had been employed without effect, it occurred to me to give acupuncture a trial. Three or four needles were deeply inserted in the affected part, and allowed to remain about an hour. The result was, complete cure of the pain, and the full use of the arm was soon recovered.

"Many cases, apparently of the same sort of rheumatism, came under my treatment, when I was Physician to the Civil Hospital at Smyrna, during the late war. Acupuncture was tried in one case, in which pain was also referred to the deltoid muscle, but it seemed to be of no avail. But while I think it right to mention this, it is to be added, that there was too often cause to suspect, either that no pain really existed, or that its relief was tardily admitted. The

harassing duties of the Crimean trenches, from which these patients had recently escaped, made them sometimes unscrupulous in devising means to delay their return to duty.

"In the next instance, the details of which I give from my note-book, acupuncture was quite successful.

"A gentleman, fifty years of age, and of strong constitution, consulted me, January 2th, 1861, for rheumatism, contracted, as he believed, from sleeping in a damp bed while travelling. He had for some time suffered severe pain in the right arm and shoulder, but not immediately in the shoulder joint. It was evident that the deltoid muscle was the part chiefly affected, but pain also extended in the course of the trapezius muscle to the back of the head. Loss of power over the arm had gradually ensued, and was so complete when I first saw him, that with the scapula fixed, he was incapable of raising it in the smallest degree. The temperature of the part seemed to be rather below that of the other arm, and sensation was slightly impaired.

"I prescribed the iodide of potassium in full doses, and it was continued until its specific effects were experienced, but no benefit resulted. Colchicum was also fairly tried, without any benefit. Tonics and sudorifics, in succession, shared the same fate. In short, with the exception of temporary relief, obtained from opiates, rendered necessary by the suffering and loss of rest, no internal treatment appeared to benefit the patient. In the meantime, external applications were not neglected—stimulating and narcotic liniments, containing ammonia, turpentine, tinctures of opium and aconite, &c., were diligently rubbed in. Sulphur was applied to the arm by means of a flannel bandage. The effect of heat was tried, by means of bags of salt, as hot as could be borne, and finally, the firing iron of Dr. Corrigan was freely employed. But the benefit afforded by any of these measures was either so trifling, or so transitory, that I felt almost in despair about the case.

"The signal success which attended the use of acupuncture in the case first mentioned, caused me, however, to suggest it to the patient, who consented to have it tried. I now cautiously introduced three stout needles into the deltoid muscle, until they touched the humerus, at about equal distances from each other, and the needles were left inserted about an hour. Almost immediate and permanent relief was obtained. The patient scarcely complained from that time of any pain in the shoulder or arm, but the paralysis continued as at first. For this state of things, galvanism naturally suggested itself. I began with its milder effects, using the ordinary induction apparatus and the intermittent current, while the force of the shocks was gradually increased. The result was perfectly sat-

isfactory; the patient was galvanized on alternate days for about a fortnight, and every application was attended by an improvement, rendered visible by the increased power of raising the arm. On February 29th, (at the end of the time above named,) he declared himself quite recovered, with the exception of an aching which occurred in the side of the neck, when he suddenly moved it; but this comparatively trivial symptom did not leave him for a considerable time. I ascertained very lately that no relapse had taken place, and all unpleasant sensations had long disappeared."

[*Medical Times and Gazette.*

VIII.—ON THE FORM OF THE ENDS OF THE FINGERS AS A SIGN OF PHTHISIS. By M. RIGAUD.

In a statistical note, based upon 179 cases of death from phthisis, and read at the Parisian Medical Society. M. Rigaud finds that no great importance can be ascribed to a sign of phthisis to which considerable value is generally attached, namely, clubbed fingers. He finds, indeed, that this sign was absent in 135 out of the 179 cases, and that it was present in very many cases in which there was no trace whatever of phthisis, or of a phthisical disposition, particularly in persons whose occupation involved such use of the fingers, as is required in polishers, burnishers, persons using the sewing machine, pianists, &c.—*Gaz. Hebdomadaire de Med. et Chir.*

ECLECTIC DEPARTMENT.

I.—ON COLOUR-BLINDNESS, OR DALTONISM. By MONTROSE A. Pallen, M. D.

Under the general term of Daltonism, as bestowed by Prevost, Wartmann, and others, upon colour-blindness, we propose to consider that abnormality of vision, which has not only excited the curiosity of the physician, but which has also occupied the earnest attention of poet, philosopher, and metaphysician. Dalton, Seebeck, Szokalski, Purkinje, Goethe, Brewster, Cunier, Combe, Dugald Stewart, Herschell, Ruete, Graefe, Hays, and numerous others, have theorized on its nature and its causes, but have been most unsatisfactory in their results.

In 1858* we advanced a theory to explain the phenomena in question, which subsequent thought strengthens. Before entering into that portion relevant to its explanation, it is proposed to consider, as cursorily as possible, its nature and history.

There are two kinds of Daltonism, viz: *Achromatopsy*, or an insensibility of the eye to colours, and *Dyschromatopsia*, an anæsthesia, or partial insensibility to colours. One is generally, if not always, hereditary, and the other is sometimes acquired, and subjectively symptomatic (spurious, and recognized by the ophthalmoscope.)

The first is dichromatic, and persons who labour under such conditions, easily distinguish the forms of objects and the gradations of light and shade, who not only are capable of seeing objects at great distances, but read with ease where the normal eye cannot. This class of Daltonists are absolutely colour-blind, and are dead to all beauties of colour, and necessarily ignorant of those branches of knowledge dependent upon colours. The second, which is also hereditary, sometimes acquired and subjectively symptomatic, is polychromatic, and presents a great variety of shades, from simple retinal congestions to such anæsthesia as border upon the dichromatics.

The influences of race seem to have been noticed, and Szokalski states that it is of Germanic origin, being particularly observed among the Germans, English, Swiss, and Belgians—the French, Spaniards and Italians being comparatively free from it—an immunity which we think to be altogether inexplicable, so much so as to occasion great doubt as to the correctness of the statement. In the United States, numerous instances have been observed, and no mention is made, that the Latin race, or their descendants in this country, are freer from the ills that flesh is heir to, than are their brethren, whose ancestry came from the vine-clad hills of the Rhine. Sex undoubtedly has some influence, perhaps a very great one, for, according to Dr. Pliny Earle, in thirty-one cases, twenty-seven were males. Wilson, White Cooper, and others, have recognized the same proportions. Cunier,† however, mentions a fact, that Daltonism occurred in five generations of one family, making thirteen cases, all of whom were females. White Cooper states, however, that these cases stand alone. With regard to any physical phenomena presenting themselves in Daltonists, there is great variance among writers, Szokalski, Ruete, Himly, and White Cooper, denying such; whilst Rau and Wartmann draw attention to a yellowish or golden tinge of the iris, which possibly and proba-

* "Prize Essay" on Vision, and some of its anomalies, as revealed by the Ophthalmoscope.

† *Annales d'Occulistique*, tome 1, p. 417.

bly is nothing more than a coincidence, as Daltonism has been observed in as many blue, grey, and black irides, as in the hazel or golden tinted. The great importance of this subject is readily recognized, when we take into consideration the numerous signals used upon all routes of transportation and travel, and the liability to errors, such as to occasion great loss of life, from a misapprehension of railway and steamship colours. The attention of our legislative assemblies should be called to the fact, that a rigid examination with regard to colours should be instituted in the cases of steamboat pilots, railway engineers, and guards, particularly when we remember that nearly five per cent. of the human race are more or less colour-blind.

Dr. Wilson states, that out of 1,154 persons examined in the city of Edinburgh alone,

1 in 55 confounded red with green.

1 in 60 " brown " "

1 in 46 " blue " "

The proportion, with respect to blue and green, was an accidental discovery; but, according to Dr. Wilson, with regard to red and green, and brown and green, they are but "degrees of the same affection; all in the first category, red with green, must be added to those in the second, brown with green; and, many of those in the second might appear in the first; but no one was counted more than once." Numerous other facts can be adduced to sustain this point; but, for the present, we proceed to the consideration of the other bearings of the subject.

The *polychromatic Daltonists*, (those labouring under dyschromatopsia proper, are subdivided into two classes: A. Those who differ in the degree of their vision, yet agree very nearly in confounding the following colours (according to Seebeck):

1. Sky-blue, grey-blue and grey-lilac.
2. Lilac and bluish-grey.
3. Bluish-green and imperfect violet.
4. Crimson, dark green and hair-brown.
5. Rose-red, green (rather blue than yellow) and grey.
6. Pure light green, grey-brown and flesh colour.
7. Intense orange, light yellowish green, or brownish green, and yellow-brown.
8. Light orange and pure yellow.

Daltonists of this class are in reality in a transition state from dichromatism to polychromatism, and have generally a very imperfect idea of all colours; but, particularly, confound red with green, which is dull grey; blue also seems grey to them. Some distin-

guish yellow tolerably well. B. Those of the second class have only an imperfect perception of the least refrangible rays, and recognize yellow best, distinguish red better, and blue not so well as the others. The principal confusion arises with—

1. Dark violet and dark blue.
2. Crimson and violet.
3. Rose-red, lilac, sky-blue and grey (including lilac).
4. Brick-red, rust-brown and dark olive green.
5. Cinnabar-red, rust-brown and dark brown.
6. Imperfect (somewhat yellowish) rose-red and pure grey.
7. Flesh-red, grey-brown and bluish-green.
8. Dark carmine and blackish blue-green.
9. Light orange, greenish yellow, brownish yellow, and pure yellow.
10. Bright orange, yellow-brown and grass green.

These are the classes which are principally met with, and the question now arises, is there no fact we can grapple to elucidate the cause, and possibly the remedy, for Daltonism? We believe there is; at least, analogy leads us so to do.

In a short paper like this, we cannot enter into the discussion of the various optical laws upon which vision is dependent; but it is well to remember, that but a small portion of the rays of light which are impinged upon the eye, enter its cavity, and not all of those which enter, reach the retina; a certain quantity, of necessity, being lost from the numerous refractions undergone, in passing through the aqueous humor, lens, and vitreous body; in fact, it is only the more central rays which pass through the pupil and lens. The structure of the lens necessitates an increase of the convergence of the rays entering and passing out of it; and those which reach the vitreous body do so in a highly concentrated stratification. Upon the formation of the vitreous body, we believe the explanation of the theory of colour-blindness depends.

According to many distinguished authorities the vitreous body is surrounded by an *envelope*, called the hyaloid. Robin, however, denies this, and contends that it is an amorphous, not even fibroid substance, surrounded posteriorly and laterally by the retina, and anteriorly by the capsule of the crystalline lens and ciliary processes. Hannover, however, and many others, contend that the vitreous humor is contained in a segmentary membrane, which can be discovered (according to Hannover, particularly,) “by a careful maceration in chromic acid, to consist of about one hundred and eighty delicate septa, like the pulp of an orange,” with the angles of the enclosed spaces in the direction of the axis of the eyeball, which do not meet, but leave a cylindrical portion for the passage

of the *arteria centralis retinae*. Bowman has confirmed Hannover's experiments in the fetus. Kolliker thinks that it is an analagous condition of the embryonic areolar tissue, which, after foetal life, disappears, and becomes a kind of more or less consistent mucus.

Most physiologists agree that the functions of the vitreous consist in the correction of prismatic refraction. Its relations to Daltonism will be explained farther on.

Numerous explanations have been offered to account for the phenomena of colour-blindness. We cannot entertain all of them, but propose to cursorily glance at the theories of some of the most eminent and intellectual men, who have attempted to solve the problem. Dalton, the author of the atomic theory, Dugald Stewart, the metaphysician, Mr. Troughton, the celebrated optician, Prof. Brandis, Dr. Somers, Dr. Unzer, and many other eminent men, have been the victims of the infirmity; and, of course, have strenuously striven to account for it, and, *par consequens*, to devise the proper remedies. Dalton's theory was, that one of the humors of the eye was a "coloured medium, probably some modification of blue." He further remarks, "I suppose it must be the *vitreous humour*; otherwise, I apprehend it might be discovered by inspection, which has not been done." A post mortem examination by Dr. Ransome failed to discover any discolouration of Dalton's vitreous humour. Notwithstanding this fact, Trinchinetti, an Italian Physician of some eminence, has revived this hypothesis, and states his belief to be, that Daltonism is produced by a colouration of one or more of the diaphanous media, probably the crystalline, and even advises its extirpation to remedy the defect. Goethe explained it by an insensibility of the retina, or sensorium, to blue colour; and, on the contrary, Szokalski, in enumerating more than sixty patients, failed to detect one in which there was absolute deficiency of the perception of blue.

In such cases, many have imagined that the retina has a bluish tinge; the ophthalmoscope now, however, places all such theories out of the question, because a bluish tinge of the retina would indicate not only dyschromatopsia, but a condition of a much more formidable nature. Dr. Thomas Young explained it on the theory of a "paralysis of those fibres of the retina which are calculated to perceive red,"—nothing more than a *quid pro quo*. Dugald Stewart explains it by a want of the adaptability of memory to colour, or an incapacity to "conceive the sensitive distinctly when the object is removed,"—a *post hoc propter hoc*.

Many learned men metaphysically inclined, for the want of a better one, have adopted Stewart's theory. Phrenologists attempt to account for it by the absence of the organ of colour; this, too,

is a mere nothing by the way of explanation. One of the best rationalistic explanations is that cited by White Cooper, as having been advanced by Hartmann; and did we not possess physical explanations, would be that adopted as the most satisfactory. "Hartmann is of opinion that it is by analysis that we arrive at a knowledge of objects, which present themselves to our notice; he supposes that we do not perceive them instantly, but little by little, and only by examination of their distance, form, and colour, which scrutiny rests on a series of changes operating on the retina, ciliary nerves, and motor ocular nerves; we do not easily recognize objects unless this succession of modification has become habitual, and takes place easily, hence achromatopsia results from a certain state of torpor and indolence of the retina and motor muscles of the eye!"

In his *Second Memoir on Acromatopsia*, Wartmann says: "I admit, with Harvey, Young, Jungken, Müller and others, that its seat is in the retina, and I think that it is produced by an abnormal state of the nervous expansion, in such sort that it reacts equally under two or more differently coloured vibrations. If the vibration caused by a ray of red is identical with that engendered by a green ray, there will be confusion of these colours. This theory is independent of all systems destined to explain light. The theory which explains *Daltonism* by an abnormal elasticity of the retina, has the advantage of substituting a reasonable physical condition, for a vague notion of the sensorium; besides, it is supported by facts, because the injuries which alter the ordinary constitution of the visual organ, are capable of exciting permanently or temporarily a false perception of colours. Lastly, it appears to be confirmed by the circumstance, that, with many Daltonians, the eye sees less distinctly the red rays, than those which the refrangibility is greater." Hannover's discovery of the segmentary disposition of that body, after its maceration in chromic acid, seems to have been neglected by all writers on Daltonism. We feel confident that an explanation of the phenomena of colour-blindness can be made by such segmentary and prismatic arrangement. The explanation we offer, and which we propose to prove by an analysis of prismatic refraction, is, that *colour-blindness is the result of irregular prismatic refraction, producing interference of rays of light, as it passes through the vitreous humour*. What conditions combine to produce such an effect, physical research has, as yet, been unable to demonstrate; but *a priori* reasoning by exclusion tends to that effect. For there are bodies which will transmit one kind of colour and reflect another—leaf gold for instance, which transmits yellow, but reflects green. Again, some substances only reflect the various rays, thereby pro-

ducing colour when they are of a certain thickness, beyond which they appear black. Now for the proofs. The peculiar property which a triangular prism of glass possesses of refracting light, and decomposing it into seven primary colours, viz., violet, indigo, blue, green, yellow, orange, and red, is the basis of our demonstration.

The solar spectrum, with regard to each particular colour, is vivid only at a particular part, as their blending is of such a nature, as to make it difficult to say where one ends and the other begins. The violet rays bend most from their course; the red the least, or are the most direct; the indigo, blue, green, yellow and orange possess this property, as they are named in this list. These colours were supposed to be homogeneous, or simple, because they preserved their individuality when passed through another lens. Some of these colours are compound, as we can synthetically demonstrate. Red, blue and yellow have been used by artists, since time immemorial, in the formation of all other tints; and as no other mixture would produce these colours, they must be necessarily simple, or homogeneous, and the others, viz.: violet, indigo, green and orange, as a natural consequence, are compound, or heterogeneous. Buffon first noticed that, by steadfastly looking at a red, yellow, or blue spot on a black or white ground, a fringed border is seen around each of them, composed of the three tints, viz.: around the red spot a green border—and green is composed of yellow and blue; a violet border is observed around the yellow spot—and violet is made up of blue and red; orange border is perceived around the blue spot—and orange is a mixture of red and yellow. These phenomena remained unexplained until Mr. Hay, of Edinburgh, brought them before the public, in his work on the ‘*Laws of Harmonious Colouring*.’ Sir David Brewster, Dr. Neil Arnot, Prof. Holmes, and many other scientific persons, have concurred in the opinions advanced by Mr. Hay. In fact, his experiments can be easily verified, as they have been done, by any one who chooses so to do, by fixing a prism in a hole in a shutter, admitting a ray of light in a darkened room, and the decomposed light thrown upon a screen. Each colour is then put to the test, and is found incapable of being divided into two. A hole is then made in the screen, corresponding to the centre of the red of the spectrum, and another in that of the blue, and these colours allowed to fall on a second screen. By means of a second prism, the red ray is directed to the spot where is the blue, and the result was a combination of the two, and a pure and intense violet produced, exactly similar in all respects to the violet on the first screen. Red and yellow subjected to the same process develops orange. Yellow and blue thus treated, produces the prismatic

green. A simple ray (red, for instance,) was then thrown upon a compound one, green, and there was no union; as, on the contrary, there was an interference, and a negative result obtained—black. Thus it was with the whole series. Thus, by synthesis, it is shown that the three homogeneous colours, yellow, red and blue, have an affinity for each other, which is wanting in violet, indigo, green and orange; and, as a consequence, could not be the same in every respect, save colour and refrangibility. The three homogeneous colours, yellow, red, blue, are in a numerical ratio as follows: yellow, three; red, five; blue, eight; and when any opaque body reflects these colours in such proportions, white is the result. In this condition, they are in an active state, and each is neutralized by the relative effect of the others. When in the passive state, these rays are absorbed, and black is the result. The effect is the same when transmitted through a transparent substance; but are *material* or *inherent* in the first case, and *impalpable* or *transient* in the second. Hence colour is not an entity, but depends upon the refractive or reflective power of bodies; and, as the disposition of the atoms or particles of various bodies, so is their power of reflecting and absorbing rays; and as the reflection and absorption, so is the colour, which is not inherent. Colour produced by artificial light, viz: oil, candles, gas, etc., the rays of which are not so pure as those of the sun, is very apt to be deceptive, so much so, that every one will mistake pale blue for green, or *vice versa*. Now, as colour is the reflection of the rays which the body does not absorb, an interference of such rays, in passing through the vitreous, produces the phenomena of Daltonism, when there is a defect of prismatic arrangement in that body. A rose is red, because it absorbs all the rays of the prism, except red, which it reflects; but look at it through the medium of a compound colour, (green, for instance,) and an interference takes place, and black results.

Each prismatic ray has a different momentum, and it requires different distances to bring them to a focus. The red having the greatest momentum, is soonest brought to a focus; therefore, the sun looks red in a fog. When we remember, that light has a regular recurrence of periodical movements, at equal intervals, (500,000,000, 600,000,000) five hundred millions of millions in a second, and that if one vibration alone were lost, the colour would be imperfect, we can form some conception of the minutest difficulty in the way of vision, infinitely too small to be appreciated by anything in the nature of physical research.

Sir John Herschell seems to have arrived at the most correct

data with regard to the length and rapidity of the various rays of the solar spectrum. We quote them as follows:

Coloured rays.	Length of luminous rays in parts of an inch.	No. of undulations in an inch.	No. of undulations in a second.
Red.....	.0,000,256	39,180	477 billions.
Orange.....	.0,000,240	41,610	506 "
Yellow.....	.0,000,227	44,000	535 "
Green.....	.0,000,211	47,460	577 "
Blue.....	.0,000,196	51,110	622 "
Indigo.....	.0,000,183	54,070	658 "
Violet.....	.0,000,175	57,490	699 "

According to the calculations of Fraunhofer, the relative intensity of light of the various portions of the solar spectrum, are numerically expressed as follows:

Violet.....	from 5 to 6
Blue, dark (indigo).....	31
Blue (of solar spectrum).....	170
Green.....	480
Between orange and yellow.....	1,000
Orange.....	640
Red, middle ray.....	94
Red, extreme ray.....	22

These tables are introduced simply to demonstrate, that the different coloured rays of the solar spectrum may be accounted for, by a difference in the frequency of recurrence in the vibrations. That light is transmitted by undulations, in a vibratory manner, we will not discuss, as such is believed by all scientific observers.

The deductions we reach, after a careful consideration of this subject, are, that if Daltonism be not dependent upon a disarrangement of the prismatic segmentation of vitreous humour, such an hypothesis readily explains all its phenomena. We feel satisfied that a polychromatic Daltonist, such as Dr. Darwin, the poet and botanist, who could distinguish a cherry from the leaf only by its form, both being gray in colour, laboured under such deformity in regard to prismatic refraction, as is above mentioned; when speaking of the interference of a simple and compound ray. The dichromatic Daltonist, or one who distinguishes only black and white, evidently lacks the proper prismatic refraction, because there is a too rapid concentration of rays, which also goes to explain the facility with which they read in darkness.

With regard to such cases of temporary Daltonism, as are frequently encountered in practice, the explanation is readily understood as being subjective, and dependent upon a pathological condition of the visionary apparatus. We have seen an instance of this, in which the ophthalmoscope revealed *hyperæmia retinae et papillæ*, and which disappeared under the proper treatment, as did the disease. As for the remedies, which are entirely of a physical

nature, a complete study of the character of the phenomena will necessarily induce the use of such glasses, tinted to throw such rays into the cavity of the globe, as will in a measure make up the deficiency caused by defective prismatic derangement of the vitreous body. These, of course, must be determined by a synthetical study of such colours, as are non-appreciable to the Daltonists.

Jungken and Chelius recommended the use of coloured bands, with their names attached, in order to facilitate the defective memories of the Daltonists, based on the theory of Stewart, which, of course, is not to be thought of. Wartmann, Sir David Brewster, Sir John Herschell, and others, have devised sundry methods of cure, which cannot for the moment be discussed. We think a series of experiments might be induced, which can overcome the defect, by an arrangement of certain coloured glasses, operating to make up a deficiency of prismatic refraction.—*St. Louis Med. Journal*.

II.—INTRODUCTORY LECTURE TO COURSE ON HYGIENE. Aux.
Faculty of Medicine, University of Pennsylvania, April 3d,
1866. By HENRY HARTSHORNE, M. D.

Without any intent to arrogate more than belongs to the department of Hygiene, it appears to me not too much to say, that it is hardly second in intrinsic importance to any of those taught in the University. If prevention is always better than cure; if the enjoyment of strength of life depend not only on rescue from dangerous diseases, but also on the possession of vigorous health, and if a large part of sound practical therapeutics consists in measures rather hygienic than medicinal, as I believe—then I think my proposition is sustained. Should more be wanting to enforce it, it may be found in the relation of sanitary science, public hygiene, to the vitality and mortality of communities. Sanitary science is essentially State medicine. There is no other therapeutics for masses of men. And when we compare results, involving large numbers of human beings, does not preventive medicine exhibit triumphs, greater than those of curative practice? I have no wish whatever, to depreciate these; I rejoice in them all. But look at the facts.

In Constantinople, in the year 543, of our era, 10,000 people, for a time, died daily of plague. In eight years from 1345, plague destroyed in all, in various places, about half of the then existing population of the globe. In 1665, 68,000 died from the same disease, in the city of London alone.

Now, from hygienic measures, there is no reason to doubt, from

the application of sanitary principles, it has come that plague has been banished from Europe, and almost extinguished in the East.

Severe epidemics of cholera have a mortality of 50, or more, per cent. The power of medicine to reduce this, has as yet been small. But it is considered that the city of Baltimore was saved from the visitation of this scourge, in 1849 and 1854, by timely precautions taken by its authorities, favored by local facilities for them, in its site.

Yellow fever has, at some times, and in certain places, been almost as destructive. No antidote, no specific remedial treatment has as yet been found for it. But General Butler demonstrated the possibility of its total prevention, in the midst of war and previous confusion, during the late military occupation of New Orleans. A great mortality, among persons altogether unacclimated, must have been thus averted.

It is almost a proverbial saying in England, that "the annual slaughter in England and Wales, from preventible causes of typhus fever alone, is double the amount of what was suffered by the allied armies at the battle of Waterloo." In the time of Sydenham, plague, small-pox, dysentery, and scurvy, caused most of the mortality in London; diseases, two of which are capable of prevention, and the others of great mitigation, by sanitary measures.

In France, Baudelocque describes a striking example in regard to scrofula. The village of Oresmeaux, though one hundred feet above the plain, was, sixty years and more since, built of clay, without windows to the houses; all being very damp. Scrofula affected nearly all the families, and extinguished several. A fire then destroyed nearly a third of the village. That part was rebuilt in a better manner, and by degrees scrofula disappeared from it; remaining in the rest. Twenty years after, another fire consumed another third: this, too, was rebuilt with improvements, and the same gain in health was observed. After that, while scrofula continued destructively in the old portion of the village, the new parts continued to be entirely free from it.

The remarkable cures of goitre and disgusting eretism obtained in Switzerland (by Dr. Guggenbühl), through the simple removal of those affected to high and salubrious localities, illustrate the same point.

So does the account cited by Dr. Combe, of the Island of St. Kilda. In 1838, of every ten children of its inhabitants, eight died between the eighth and twelfth days of their existence. Yet, a clergyman, resident there, had at the same time, a family of four children, in good health. What made the difference? His house was constructed and managed, as a house ought to be; while the

huts of the natives were small, low-roofed, without windows, used in winter as receptacles of manure, laid out upon the floors and trodden under foot to a depth of several feet. But I need not multiply these examples, in which all sanitary records abound. I wish to add only one, which has great significance. Mr. Chadwick asserts that, in a well-marked instance, involving a number of families, intemperance, hopeless to all appearance, in a low, insalubrious quarter of London, became curable—yielded to reform under effort—when the subjects of it were transferred to an open, healthful, and comfortable locality. Our bodies and our spirits are held fast in close companionship. To raise the one is to help the other. Past all doubt, sanitary improvement promotes domestic, social, and moral reform. The Board of Health is a good handmaid or helpmeet for the Board of Missions. Bread in the one hand and the Bible in the other, will do more for the feeble, suffering, and degraded poor, than two Bibles and no bread.

Let us glance now, for a few moments, at the history of our subject. Hygiene, as an art, is older than therapeutics; as the avoidance of disease must have been, from instinct, as well as intelligence, an object sought before the discovery of means for its medicinal relief. First hygiene, then surgery, then medicine; was the natural historical order. The early temples of Æsculapius, before Hippocrates, were *sanitaria*, rather than schools of medical art; to that time a body of medical science could hardly be said to have begun to exist; and the first surgery, at all systematic, is referred to the need of the masters of the gymnasia and palaestra, to deal often with accidents occurring among the contestants in their exercises.

But, further back than this, some recognition of hygienic principles may be traced in the cradle of the most potent civilization of antiquity—in Egypt. In the great pyramid of Cheops, is an arrangement evidently intended for the ventillation of its dark interior chambers. The embalming of bodies of the dead, not only of men, but of animals, however it may have been associated with superstitious beliefs, is so well adapted to the prevention of insalubrity in a populous land, with a tropical climate, as to make it likely that it sprang in great part from the preventive wisdom of the priests.

Neither is it irreverent, nor a disparagement of the divine authenticity of the Mosaic law, in whose ritualism so much reminds us of Egypt in the days of its monuments, to suppose that some things were retained in the Levitical code, of what was known and practised in the land of bondage, before the Exodus. No doubt, however, Moses greatly extended the provisions required for health

among his people. His regulations concerning food, ablutions, and other purifications, and segregation of persons with certain diseases, were imperative and precise. I will not detain you with examples from so familiar and accessible a document.

In ancient Greece, as I have intimated, physical culture was most highly esteemed. Socrates was in person, a match for more than one, not only in philosophic disputation, but as a soldier on the field. Plato was a superior athlete, as well as the most divine of sages; and Alcibiades and Pericles were as swift of foot and strong of arm, as they were eloquent of tongue and keen in statecraft, or bold in war. It is on good authority that I state the opinion, that the amazing intellectual supremacy of the men of Athens, and other parts of Greece, from Homer, to its decadence, was, in no small part, owing to the abundant care always maintained of the development of the whole organization, brain and body together—"mens sana in corpore sano." In Sparta, a barbaric ruthlessness induced the custom of exposing infants to the rude elements, so as to allow only those whose bodies had vigor enough to be thus hardened to live; the feeble ones being destroyed by it. In most of the cities of ancient Greece, public baths existed, for both the rich and the poor. Gratuitous attendance, too, of the poor, for prevention, as well as cure of disease, by *arch-iaters*, appointed publicly for the purpose, prevailed. Democedes was one of the earliest of these. This custom was afterward imitated in Rome; and later, in Germany—where the Meister-Arzt of the 15th century, and the Stadt-Arzt and Kreis-physicus of later dates, had a similar place.

The Goddess of health, Hygeia, of the Greeks, was the daughter of Æsculapius, God of Medicine. Her name was mentioned, with the other deities, in the Hippocratic oath; which every loyal physician was required to take, as one of the Æsclepiadæ: "By Apollo, the physician, by Æsculapius, by Hygeia, Panacea, and all the Gods and Goddesses."

Of early writers upon hygiene in Greece, we have Hippocrates himself, the first, in his work on "Air, Waters, and Places;" a treatise in which the influence of climate and locality, not only upon health, but upon the characters of races of men, was pointed out as clearly and sagaciously as it has been since by Montesquieu, in his "Esprit des Lois," written in 1748; and, with less originality, in our own times, by Michelet, Guyot, and Buckle. Philiston, Diocles, and Plutarch also wrote early hygienic treatises.

Positive measures of public hygiene were instituted, perhaps, first by Acron, of Crotona, of the school of Pythagoras; who is said to have dissipated the cause of a plague at Athens, by fires

burned in the streets. Empedocles afterward found it possible to destroy or impede the action of malaria, in one instance, by draining a swamp, and in another by building a high wall to protect an exposed town. Herodicus was so famous for his application of gymnastics and regimen to the improvement of health, that Plato accused him of doing an ill service to the State—by keeping alive people who ought to die, because, being valetudinarians and below par, they cost more than they were worth to the community.

Rome showed her appreciation of sanitary art, by extensive drainage of the base of the hills on which the city was built; by the magnificent sewer, Cloaca Maxima, of which a part is yet left, the oldest ruin of Europe, thirteen feet in diameter at the outlet; by the aqueducts, and by suburban interments, whose number is attested all along the Appian Way; and by the appointment of Ediles, officers whose duty was to inspect and regulate the construction, with a view to salubrity and safety, of all private and public buildings. Regulations of internal sanitary police, in regard to impurities of all kinds, were also highly advanced among the ancient Romans. Besides these, the private and public baths of Rome, some of them palatial in grandeur, were in part hygienic, although degenerating into effeminate luxuriousness; as the gymnasia did, at last, into the scenes of bloody gladiatorial fights of men and beasts.

Latin writers upon hygiene were especially Celsus, Galen, in an express work upon the care of health, Oribasius, Aëtius, and Paulus Aegineta.

Pass we from these, for want of intermediate material, over the quaint Latin poem of John of Milan, in the beginning of the 12th century, to Quarantine. The purpose of this institution was the exclusion of the Egyptian plague from Italy. The name was derived from *quaranta*, forty, the term of days prescribed for the detention of suspected vessels, on arrival at or near port, the time probably following one of the Mosaic periods of purification. I will give you here only a few dates, for I fear being tedious upon this historical theme, while able to make of it but an outline.

Florence had the first beginning of quarantine, about 1348. Then Venice and Sardinia, and the other countries, afterward, of Europe. The earliest *lazaretto* dated about 1453. Regular quarantine was established in England in 1710. In 1700, Wm. Penn, the founder of our State and city, had enacted a quarantine law in Philadelphia.

Although the utility of quarantine for any purpose is now warmly disputed by some, and its range of availability and proper mode of management, obviously need very different limitations, at all events, from those of middle ages, its existence has been a cardinal fact in the history of sanitary science. It is to be hoped that

our own day will witness the final settlement of all questions concerning it; and the bringing into harmony the now conflicting opinions of medical men, and, with the real facts, a reconciliation of the interests of commerce and the popular understanding of communities.

Including rightfully under hygiene all measures of "preventive medicine," we may rank the introduction of vaccination, by Dr. Edward Jenner, in 1798, as its most signal triumph. Nothing in all the records of our Profession, not even the discovery of the power of cinchona in the cure of malarial disease, excels this in value to mankind.

A few words now upon the literature of modern hygiene.

Boerhaave and Cullen incidentally taught hygiene. Locke, the philosopher, wrote on physical education; but it is to France, in our own century, that we must ascribe the credit of the establishment of a definite science of "*hygiène*." The word itself is French. I shall not enumerate many names; but those of Tourtelle, Hallé, Du Chatelet, Tardieu, Villermé, Fodéré, Cabanis, Boudin, Levy, and Becquerel, must not be passed by here.

Personal hygiene was many years ago written upon in England, by Dr. A. Combe and others; climatology, by Johnson, Martin, and Johnston; public hygiene has had its later lights there, in Chadwick, Southwood Smith, Simon, Letheby, Greenhow, and Florence Nightingale, the angel-hearted and nobly strong-minded English woman. On the continent of Europe, outside of France, there have been—most noted as hygeists—Quetelet, Friedlander, Mühry, Casper, Hufeland, and others. Sanitary topics have now become (in Great Britain) favorite ones with all highly educated men. Their Social Science Association, and Epidemiological Society, have accomplished a great deal of good work.

In our own country, this department of Science has not been altogether neglected. After Dr. Rush, one of the earliest and best writers upon it here, has been our distinguished fellow-citizen, Dr. John Bell. Another was the able and learned Professor Dunglison. An excellent treatise, especially upon military hygiene, was written during our late war, by Surgeon-General Hammond; and one on mental hygiene, by the eminent Dr. Ray, not long after. Besides, we have Drs. Jarvis and Curtis, of Boston; Snow, of Providence; E. Harris and Griscom, of New York; Barton, of New Orleans, and, far from the least, my distinguished friend, Dr. Jewell, of Philadelphia, the founder of the first American Sanitary Convention, and well known for many valuable sanitary labours.

Our science is now the rising science of the day. To it, in Europe, several well conducted periodicals—the *Annales D'Hy-*

giène, the oldest and best—are chiefly devoted. At Paris, public professorships of hygiene have been in existence for many years. In Great Britain, there are now two at least—that of Prof. Parkes, in the Army Medical School at Netley, England, and of Professor Mapother, in the Irish Royal College of Surgeons, at Dublin. In the United States, while the subject has received some partial attention during courses upon other branches, I am not aware of any definite public course of instruction expressly upon it—of any regular collegiate professorships of hygiene—until it was made a part of the plan of enlargement of the curriculum of this University, by the late munificent endowment of Professor Wood, the advantages of which we are proceeding to enter upon.

I feel, then, gentlemen, that the responsibility I bear here is a somewhat heavy one. But the same reason—that this course is the first of its kind here—gives good ground of claim for indulgence—asking lenient allowance for any deficiencies—because there are no precedents to guide—there is no routine to follow. I must depend upon your kind consideration in this.

But I have confidence in the interest of my subject, as well as in its importance. As to the latter, let me add a few words.

In France, in 1772, the annual proportion of deaths was 1 in 25; in 1845–6, 1 in 45. The mean duration of human life in the same country was in 1806, 28½ years; at present, 33.6 years. In London, in 1685, (not a sickly year,) one in twenty of the inhabitants died; now it is but one in forty. Macaulay estimated in his History, that the difference between London in the Seventeenth and London in the Nineteenth centuries, is as great as between the same city in ordinary years, and in those in which the cholera prevailed. Life has been prolonged twenty-five per cent. in the course of the last fifty years. In the Sixteenth century, at Geneva, the mean probability of life was eight or nine years; in the Seventeenth, thirteen to fourteen; the Eighteenth, about thirty; and in the Nineteenth, forty to forty-five. Now to what is this great change owing? No doubt, advances in therapeutical, surgical, and obstetrical science and art have done much; but I am bold to believe that increased knowledge and observance of the laws of health have done more.

Much, however, remains yet to be done in the same field. Millions of men's lives are wasted annually by neglect, error, or ignorance. Less than a score of years ago, the mean duration of life in New York and Philadelphia was but between twenty and twenty-one years. Plague has become almost extinct; but yellow fever is dreaded, year after year, even in our own latitude; and, looking Eastward, across the sea, we now behold cholera, like a portentous

cloud, looming in the distance, full of death and terror. These, too, have to be met and averted. Will it not be a triumph of hygiene, if it can be shown that all great pestilential epidemics are preventable? That no yellow fever need ever visit our ports—no cholera ever cause panic in our cities? I believe this to be the truth, and a truth than which hardly any other, of private or public interest, can have more importance.

I know that some very eminent sanitarians insist at present, especially in England, that too much has been made of *filth*, (which Lord Palmerston called “only matter *out of place*,”) as a cause of disease. I know that contagion, positive, contingent or constructive, is dreaded by many still, almost as it was in the days of the first quarantine of the Fourteenth Century. Contagion is asserted of cholera, by some even of high medical authority. And so, too, of yellow fever.

It will be part of my duty, during the progress of these lectures, briefly, but carefully, to examine these questions; as bearing upon prophylactic measures, for individuals and communities. I hope to be able to show you, that most, if not all of the facts can be explained in harmony with the best humanitarian interests; and, hopefully for the cause of progress, commerce and social intercourse among mankind.

We shall never be able to drive disease from the earth. Not only the poor, but the sick, “will we have always with us.” Man’s life will never again be prolonged beyond a century. Enough, if he could be made to secure, as a mean, his three-score years and ten. Enough, if from those years were taken, by right self-management, of the “ills that flesh is heir to,”—all but those which a wise Providence would allot to us, without their being multiplied by our own ignorance or fault — *Med. and Surg. Reporter*.

III.—ON SUBCUTANEOUS INJECTION OF MORPHIA IN CHOLERA. By ISAAC ASHE, M. D., Birkenhead.

[The following cases occurred in the practice of Dr. Ricketts, of Birkenhead, who, perceiving the value of opium in cholera, and also the difficulty of administering it, either by the stomach or rectum, without its being immediately rejected, conceived the idea of employing it, as related in the sequence, and with success in several instances.]

CASE 1.—Mrs. H., aged thirty-five, on November 11th was seized about 7 o’clock, A. M., with violent purging and vomiting, occurring about every quarter of an hour, and attended with severe

cramps in the bowels, extending down the limbs. The evacuations were of the usual rice-water character; coldness and collapse came on very speedily; and when Dr. Ricketts was sent for at 10 o'clock, or three hours after the commencement of the attack, the patient was already cold and livid in countenance.

Dr. Ricketts immediately injected $\pi\chi$ xv. of liq. morph. acet. beneath the skin of the abdomen. In quarter of an hour the cramps were completely removed, and the patient expressed herself as very comfortable. Dr. Ricketts administered, also, a few grains of calomel. From the moment of injection there was no return of either purging or vomiting; collapse was removed, warmth returned to the surface, and she rapidly regained strength. The next day she was able to be up, and felt almost as well as ever, being able even to go about and attend to household matters.

CASE 2.—At half-past 12 o'clock, the same night, Dr. Ricketts requested me to see a patient, with similar symptoms. He was an old Indian veteran, aged sixty-four, and had often seen men struck down in India with cholera, and was, consequently, very well aware what was the matter with him. I found him suffering from violent purging, which had occurred, he estimated, about twenty times within the eight hours which had elapsed from the commencement of the attack; vomiting had come on about two hours later, and was continuing with great frequency and severity. The cramps in the bowels were so severe, that the stout old soldier was crying out with them; they extended also down the thighs; collapse had not yet commenced, but the surface was much colder than normal, though the pulse was 104. Following Dr. Ricketts' treatment, I injected $\pi\chi$ xv. of liq. morph. acet. beneath the skin of the abdomen, and wishing thoroughly to test the efficacy of this plan of treatment, determined to have recourse to no other measures. In a quarter of an hour the cramps were quite gone, and the patient exclaimed, about the wonderful powers of the remedy. They did not again recur, though the purging returned, but with less frequency; vomiting also recurred once or twice during the night. Accordingly, some hours afterwards, Dr. Ricketts injected a second $\pi\chi$ xv. of the liq., which had the effect of completely arresting all purging and vomiting. The patient was up the next day, complaining only of a little weakness, and on the following day he set out on a journey.—*Med. Times and Gazette.*

IV.—RHIGOLENE, A PETROLEUM NAPHTHA FOR PRODUCING ANÆSTHESIA BY FREEZING. Read before the Boston Society for Medical Improvement, April 9th, 1866. By HENRY J. BIGELOW, M. D., Professor of Surgery in the Massachusetts Medical College.

The above name is proposed, as convenient, to designate a petroleum naphtha boiling at 70° F., one of the most volatile liquids obtained by the distillation of petroleum, and which has been applied to the production of cold, by evaporation. It is a hydrocarbon, wholly destitute of oxygen, and is the lightest of all known liquids, having a specific gravity of 0.625. It has been shown that petroleum, vapourized and carefully condensed at different temperatures, offers a regular series of products which present more material differences, than that of their degree of volatility, and that the present product is probably a combination of some of the known products of petroleum, with those volatile and gaseous ones, not yet fully examined, and to which this fluid owes its great volatility. A few of these combinations are already known in trade, as benzolene, kerosene, kerosolene, gasolene, &c., all of them naphthas, but varying with different manufacturers. I procured, in 1861, a quantity of kerosolene of four different densities, and found the lightest of them, the boiling point of which was about 90° , to be an efficient anæsthetic by inhalation. When it was learned here that Mr. Richardson, of London, had produced a useful anæsthesia by freezing through the agency of ether vapour, reducing the temperature to 6° below zero, F., it occurred to me, that a very volatile product of petroleum might be more sure to congeal the tissues, besides being far less expensive, than ether. Mr. Merrill having, at my request, manufactured a liquid, of which the boiling point was 70° F., it proved that the mercury was easily depressed by this agent to 19° below zero, and that the skin could, with certainty, be frozen hard in five or ten seconds. A lower temperature might doubtless be produced, were it not for the ice that surrounds the bulb of the thermometer. This result may be approximately effected by the common and familiar "spray producer," the concentric tubes of Mr. Richardson not being absolutely necessary to congeal the tissues with the rhigolene, as in his experiment with common ether. I have, for convenience, used a glass phial, through the cork of which passes a metal tube for the fluid the air-tube being outside, and bent at its extremity, so as to meet the fluid-tube at right angles, at some distance from the neck of the bottle. Air is not admitted to the bottle, as in Mr. Richardson's apparatus, the vapour

of the rhigolene generated by the warmth of the hand applied externally, being sufficient to prevent a vacuum, and to ensure its free delivery: 15° below zero is easily produced by this apparatus. The bottle, when not in use, should be kept tightly corked, a precaution by no means superfluous, as the liquid readily loses its more volatile parts by evaporation, leaving a denser and consequently less efficient residue. In this and in several more expensive forms of apparatus in metal, both with and without the concentric tubes, I have found the sizes of 72 and 78 of Stubbs' steel wire gauge to work well for the air and fluid orifices respectively; and it may be added, that metal points reduced to sharp edges are preferable to glass, which by its non-conducting properties, allows the orifices to become obstructed by frozen aqueous vapour.

Freezing by rhigolene is far more sure than by ether, as suggested by Mr. Richardson, inasmuch as common ether, boiling only at about 96° instead of 70° , often fails to produce an adequate degree of cold. The rhigolene is much more convenient and more easily controlled than the freezing mixtures hitherto employed. Being quick in its action, inexpensive and comparatively odourless, it will supersede general or local anæsthesia by ether or chloroform, for small operations and in private houses. The opening of felons and other abscesses, the removal of small tumours, small incisions, excisions and evulsions, and perhaps the extraction of teeth, may be thus effected with admirable ease and certainty; and for these purposes surgeons will use it, as also, perhaps, for the relief of neuralgia, chronic rheumatism, &c., and as a styptic, and for the destruction by freezing of erectile and other growths. But for large operations, it is obviously less convenient than general anæsthesia, and will never supersede it. Applied to the skin, a first degree of congelation is evanescent; if protracted longer, it is followed by redness and desquamation, which may be possibly averted by the local bleeding of an incision; but if continued or used on a large scale, the dangers of frost-bite and mortification must be imminent.

It may be superfluous to add, that both the liquid and the vapour of rhigolene are inflammable.—*Boston Med. and Surg. Journal.*

V.—THE THERMOMETER IN DISEASE.

Much attention has of late years been paid to the temperature of the body in disease, and much practical information has been gained from this study. We, therefore, propose to lay before our readers an account of the help which we may get from the temperature of the body in the diagnosis, prognosis, and treatment of disease.

To Traube, Baerensprung, and Wunderlich, on the Continent, and to Parkes and Sidney Ringer, in England, we are chiefly indebted for the information we possess on this subject. By the use of the thermometer, we are enabled to distinguish between diseases, the symptoms of which are so similar, that the most practised must wait for the disease to declare its true nature, by its further development. Such cases constantly present themselves to the practitioner. They baffle his skill, compel him to postpone his treatment, and they may injure his reputation. In such cases, the thermometer, by the evidence it gives of the temperature of the body, often affords us a certain means of diagnosis.

A patient is suddenly seized with a severe pain in the side. This is increased by breathing, coughing, or pressure on the chest. The expression is anxious, and the breathing is hurried and superficial. There may be slight cough. The pulse beats quickly and feebly. Sleep is prevented and the appetite becomes impaired. By a physical examination of the chest, we find that the painful side expands imperfectly. The percussion note may be slightly dull, and the respiratory murmur is weak and jerking,

This group of symptoms is unfortunately too common. Have we here a case of pleurisy or pleurodynia? How are we to decide? The pain is of itself sufficient to explain all the symptoms and physical signs. This prevents the free play of the chest, and consequently the movements are hurried, jerking, and abrupt. It quickens and enfeebles the pulse; it prevents sleep. The pain and want of sleep impair the appetite. On account of the impairment of the movement of the chest walls, the respiratory murmur is weak on the affected side.

In such a case, the presence or absence of cough and the state of the pulse may afford much information. But this evidence cannot be implicitly relied on. With pleurisy, there is often some cough, and, owing to the fever which accompanies the disease, the pulse is quickened. Neither of these symptoms usually occur in pleurodynia; but cough due to some bronchitis may be present in pleurodynia, and pain, or fear, or the excitement caused by the visit of the medical attendant, may cause the pulse to beat quickly. Pleural friction often cannot be detected by auscultation. But pain is common to both pleurisy and pleurodynia. This pain, as we have seen, may produce all the symptoms and physical signs, that are often present in either disease. The diagnosis, therefore, at the outset of the attack, becomes, in some instances, impossible, and must be postponed, till well-marked physical signs are developed.

Fortunately, by means of the information, that we gain by the

thermometer, we can at once decide the true nature of the disease in question. Pleurisy is an inflammatory disease; pleurodynia is not so. *In all acute inflammatory diseases, the temperature of the body is raised.* Hence, in all cases of pleurisy, the temperature is considerably raised at the very commencement of the attack. In pleurodynia, the temperature remains normal. The temperature of the body in health, varies from 97 to 99-6° F. In pleurisy, it rises to 104 or 105° F.

On the other hand, with such an elevation of the temperature, as that just mentioned, occurring with the symptoms detailed above, we are justified in diagnosing pleurisy. It is true, that this elevation may be caused by some coëxisting disease. This, however, is a rare coincidence, and such coëxisting disease can be mostly detected; therefore, in the absence of coëxisting disease, our diagnosis must be pleurisy, and the event will justify such a conclusion. Should it be urged, that the hand can detect this elevation, and thus the use of the thermometer is uncalled for, it may be answered, that firstly, if the hand alone be employed, much error is liable to be incurred; for a dry skin, of natural temperature, may feel preternaturally hot, while, on the other hand, a hot but moist skin, may feel to be considerably cooler than the temperature indicated by the thermometer.

As a means of estimating the amount of preternatural heat, the hand is all but useless. But it is important to obtain an exact estimate of the elevation of the temperature; for by careful observations, it has been shown, that *the degree of elevation is proportionate to the severity of the diseases that causes it.* Hence the amount of preternatural elevation of the temperature forms one of the most important factors on which the prognosis is made. This exact information, the thermometer alone can give us. Nor are the other symptoms, individually or collectively, at all to be compared to the temperature in this respect; *for in every case of fever, no matter from what it originates, the temperature is elevated, and this elevation of the temperature is the only constant symptom of fever.* It alone is pathognomic of fever. Thus fever and preternatural heat of the body are used as synonymous terms; for the pulse may beat with the frequency of health, the tongue may be clean, and even the appetite good, and thirst may be absent; but there is always preternatural heat of the body, if fever exists. Thus cases are recorded, (and such frequently occur to those who use the thermometer,) where, from the presence of various symptoms gravo disease was apprehended, while an appeal to the thermometer negatived this assumption; or from the apparent mildness of the symptoms, an unimportant complaint has been suspected, when the ther-

monometer has indicated some grave affection. In all these cases, the predictions made, by the assistance of the thermometer, have proved correct. The following cases illustrate these remarks:

A girl, aged 18, was admitted into Hospital. She was extremely weak, so that she had to be assisted into the ward. She had been ill eight days. During this time, she had suffered from severe frontal headache and some diarrhoea. The motions were liquid. The tongue was thickly coated. The attack had commenced insidiously. There were no typhoid spots, and her abdomen was not distended. Her sister was at that time in the Hospital, under treatment for typhoid fever. These circumstances were sufficient to render it highly probable, that she suffered from typhoid fever. Her temperature, however, was normal, and thus our diagnosis was corrected. In two days, she had so far recovered, as to be able to dress and walk about the ward, and in a few days more she left the Hospital.

A girl, 22 years of age, was admitted into Hospital a month after her confinement. She felt slightly indisposed. Her appetite was good and her tongue clean. She assisted in the work of the ward. On careful examination, very slight tenderness of one breast was discovered. Of this, however, she had not previously complained. Her temperature varied between 101 and 102° Fah. In a few days, the breast became much enlarged, hard, red and tender, and subsequently an abscess of considerable size formed.

While advocating, however, the use of the thermometer, we by no means wish to lead our readers to the conclusion, that the information it gives us enables us to disregard the remaining symptoms; for it is from these latter, that the diagnosis must be mostly made. It is from these that the greatest information, in respect of the treatment, is obtained. Much care is necessary in the use of the thermometer. It is, therefore, advisable that we should make a few remarks respecting the method of its application.

The temperature of the body should be taken by a thermometer, placed in the axilla. The patient should be in bed and undressed; otherwise the temperature of the surface of the body may be considerably below that of the internal parts. A difference of 2, or even 3° Fah., can easily result from the non-observance of this precaution. The patient should be in bed an hour before the temperature is taken, as this time is often regulated, before the surface of the body recovers from the effects of the previous exposure. The patient should be placed diagonally on the right or left side; for, if placed on the back, patients are apt, in their anxiety to retain the thermometer in the axilla, to press the arm too firmly against the side. The axilla is thus converted into a cavity, in which the bulb

of the thermometer moves about loosely, without coming thoroughly in contact with the tissues. This is specially apt to occur in emaciated people. On the other hand, if placed quite on the right or left side, the distal end of the thermometer becomes depressed, thus rendering the reading of it difficult—nay, sometimes the column of mercury divides, when part gravitates down the tube, giving a fictitious result. If, on the other hand, the patient be placed neither completely on the back nor side, but in a medium position, these objections are obviated; for the parts then fall naturally together, no muscular effort being required to retain the thermometer. Care should be taken that the patient has been previously covered up, and that the axilla has not been exposed; otherwise, a difference of 2 or 3° Fah. may result. It is, therefore, better, if the patient has been lying on one side, to turn him diagonally on the other, and to use the axilla, which was previously most dependent. Care should be taken that the thermometer be in complete contact with the skin, and that no clothes are in the way to separate it, from the surface of the body. All these precautions being observed, it is better to allow the thermometer to remain in the axilla, at least five minutes. The temperature should be taken twice in the day—at eight A. M. and eight P. M. If only one observation can be made in the day, the evening must be chosen, for often the temperature is normal in the morning, but very considerably elevated at night.

The best thermometers only should be used in these examinations.

[*Canada Medical Journal.*

CLINICAL LECTURES.

CLINICAL NOTES OF CASES TREATED AT THE LATE C. S. MILITARY HOSPITAL, CHARLOTTESVILLE, VA. From Prof. J. L. CABELL, M. D., University Va.—[From Hospital Case-Book.]

CASE 1.—*W. R. O., Private, 11th Alabama Regiment, Co. F., aged 30, farmer.*—Was struck by a ball, or small fragment of shell, just below the crest of the left ilium, an inch behind the anterior superior process, causing much contusion of the surrounding parts. The projectile passed forward, detaching and shattering the crest of the ilium, as far forward as the superior process, and driving the fragments among the muscles of the anterior walls of the abdomen, to the distance of two or three inches. Neither then nor now has there been any swelling or general tenderness, but for a distance of some inches around the wound, the parts were, and have been very sensitive. The discharge was sanious for several days, and afterwards became progressively and more decidedly fecal. Gas, however, never escaped. On the eleventh day, from the date of injury, a fragment of bone was found loose in the wound and removed. From the date of his admission into the Hospital, December 15th, to the 27th of December, his condition has remained unchanged. During the whole of that period, his pulse did not exceed 80, the bowels remaining in good condition; appetite and sleep fair; had diarrhœa for two days after having received the injury; in fact, diarrhœa had existed for months, and was controlled by opiates. No urinary symptoms have presented themselves, since the receipt of the injury.

Dec. 27th.—Another piece of bone was removed to-day, the fifteenth day from the infliction of the wound. Complains of thirst; had three actions during the night, rested tolerably well; has a troublesome cough; p. 80; tongue red; appetite good; fecal matter tinged with blood still escapes from the wound. Sustaining treatment continued and ordered. Ward mixture for cough. *R. Syrup Scillæ ʒj., Tinct. Lobelia ʒj., Paregoric ʒj., dose teaspoonful.*

28th.—Complains of burning sensation in wound; p. 80; tongue red and dry in centre; some thirst and dry skin; has had no action during the night; urine clear and free; discharge from wound still offensive; treatment continued.

29th.—Rested pretty well; had one action during the night; p. 80; tongue moist; skin cool; appetite good; has slight swelling of parotid gland; wound still discharging offensive matter; the urine passes freely; treatment continued.

30th.—Rested very well; tongue better; p. 70; no action on bowels; character of discharge more healthy; three pieces of bone were removed this morning.

31st.—Rested well; appetite good; tongue nearly natural; character of discharge much improved in appearance; complains of soreness of parotid gland. Treatment continued, with whiskey toddy three times daily.

Jan. 1, 1863.—Doing well; continue treatment.

2d.—Doing well; continue treatment.

3d.—Wound continues to do well; rests pretty well; discharge more abundant and less offensive; p. 81; appetite good; skin pleasant; tongue natural.

4th.—Rested well; pulse good; skin cool; appetite good; wound still discharging; several fragments of bone were removed this morning.

5th.—Wound doing well; appetite good; pulse and tongue fair; continue treatment.

6th.—Condition of patient much better; wound decidedly improved; several fragments have been removed since yesterday.

7th.—Still continues to do well; wound looking decidedly better.

8th.—Wound still doing well; suppuration free.

9th.—Case is progressing well; treatment continued 10th and 11th.

12th.—Continues to improve; wound suppurating freely.

13th.—Condition about the same as yesterday.

14th.—Up to the present time, this case has been doing well; to-day he had a chill, followed by fever and sweat; he is much emaciated; his appetite is also failing; ordered continuance of nourishing diet, with the addition of more whiskey; pulse has been about ninety; to-day it is over one hundred; bowels in good condition.

15th.—No improvement; p. 120 and feeble; complains of feeling cold; is evidently sinking; wound looks badly; takes no nourishment.

16th.—Has taken no notice; extremities cold; p. 130; lies in an insensible condition; tongue dry; expectoration much diminished, with dry cough; refuses medicine and diet. *

CASE 2.—*R. F. C., Private, 18th Mississippi Regiment, Co. G, age 28, farmer.*—Wounded May 3rd, 1863. Ball entered and fractured temporal bone, near upper edge, and was trephined and ball extracted May 10th. Treatment: cold-water dressing.

June 1st.—Wound doing well; general condition and appetite good. 2nd.—Wound doing well; treatment continued. 4th.—

This case is remarkable, as demonstrating the fact, that the intestinal canal may be perforated without any of the usual evidences of immediate collapse and prostration.—[Ed.]

Wound doing well. 5th.—Wound doing well; treatment continued. 6th.—Doing well; treatment continued. 8th.—Improving; treatment continued. 14th.—Doing well; treatment continued. 15th.—Doing well; treatment continued. 16th.—Doing well; treatment continued. 18th.—Doing very well; continue treatment. 19th.—Some erysipelatous inflammation and swelling of face; treatment—Mur. Tinct. Ferri $\text{m} \times 15$ gt. 4 h. 20th.—Doing very well; continue treatment. 21st.—Doing very well; treatment continued. 22d.—Improving; treatment continued. 23d.—Doing well; continue treatment. 24th.—Doing very well; treatment continued. 27th.—Doing well; treatment continued.

July 1st.—Improving; treatment continued. 3d.—Wound seems to be improving, and general condition apparently good, until about one o'clock to-day, when he was suddenly seized with general convulsions, which lasted, with great severity, for some fifteen minutes, and were succeeded in about an hour, by a second attack. There was no perceptible cause, except that he had complained of headache all the morning. There has been no return since. 5th.—Gave cathartic pills yesterday, and large enema at night, which resulted in a copious discharge of black foetid matter. Had three returns of general convulsions last night; less severe than the former. 6th.—No material change; bowels regular; complains of constant pain in head; has had no return of convulsions since last report; treatment continued. 7th.—Had six convulsions in past twenty-four hours, longer, but less severe, than previously; bowels regular; no perceptible cause assignable. Treatment: bowels kept regular with cathartics; diet stimulating; cold applications to head. 9th.—At 4 P. M., July 8th, the wound was examined, by making a straight incision, about one and a half inches in length; some fragments of the inner and outer table of cranium were removed; no anæsthetic used; had two convulsions, one about 4 A. M., July 9th; the last, 10 A. M., continuing 20 minutes; otherwise, doing well. 10th.—Had a slight convulsion at 5 P. M., July 9th; slept well; had a threatening of convulsion at 8 A. M.; one natural stool; pulse quiet; small spiculum of bone, resting on brain, removed. 11th.—Had a slight convulsion in the afternoon, and one during the night. The loss of power in the right arm continues, with partial paralysis of right side; speech improved; some confusion of ideas; bowels natural; pulse quiet. 12th, 9 A. M.—Rested well; no convulsion; appetite fair; wound looks well; two stools; continue treatment. 13th, 12 M.—Continues to do well; no convulsion; wound nearly healed; ideas and memory improved. 14th, 12 M.—No change to note; improving. 15th.—Transferred to ward H; had a slight convulsion after removal; wound discharging; pulse normal. 16th.—

Rested fairly; seems to be something better; ideas cleared. 17th.—Sleeps well; though does not feel so well; bowels torpid; two Comp. Cath. pills. 18th.—Pills operated; wound examined; a small spiculum of bone removed. 19th.—Does not feel well; disposed to lower the head; says it feels more comfortable; wound nearly healed; does not discharge. 20th.—Appears languid and listless; pulse rather feeble, not frequent; bowels torpid. 21st.—Lies with the head low; still listless; difficulty in collecting ideas; about three o'clock, P. M., had a severe rigor and seems to be suffering pain; wound discharging a sanious pus. An incision made over the seat of injury, and on exploration with probe, a large abscess was emptied of about two ounces of purulent matter. Expression of eyes unsteady. 22d.—Did not rest well; pulse 100, and feeble; extremities cool; anorexia complete; nausea; egg-nog ordered, 5j. every two hours. 5 P. M.—Reaction fully established; face flushed; pulse 120; pupils rather more contracted; unsteady motion of left. 23d.—Patient died at 5 A. M., without any marked change in his condition during the night.

Upon autopsy made six hours after death, the opening through both tables of the frontal bone, over seat of injury, measured one and a quarter inches from the line of sagittal suture, at supra-posterior angle of left half of frontal bone. A widely separated fissure, extending from the lower border of the oval opening, and parallel with the line of sagittal suture, down to the supra-orbital ridge; thence obliquely across, or through, the orbital plate of the frontal bone to the foramen cecum.

The frontal sinus was found filled with pus. Upon examining the brain and its membranes, a spiculum of bone was found imbedded in the dura mater, and resting upon the brain. The membranes were much discoloured, and injected for some distance around the seat of injury. The substance of the brain was found to be softened, for an inch, around the circumference of the ragged opening in the dura mater. The outlet of a well formed sac, forming the walls of a large cerebral abscess, from which, thirty-six hours previous to dissolution, about two ounces of erosive pus were evacuated. This sac, on dissection, was found to be two and a half inches deep, by one and a half inches in diameter. Purulent lymph was found effused over the pons varolii, and an abnormal quantity of serous fluid in the lateral ventricles.*

* After such serious injury and histologic disorganization, this case is believed to be without parallel, in the length of time, (60 days) which elapsed between the receipt of the wound and the first distinct evidences of grave constitutional disturbance. This interval of comparative rest, has usually averaged from seven to fourteen days, and one case is on record, where constitutional manifestations were postponed to the twenty first day.—[Ed.]

ORIGINAL CORRESPONDENCE.

NEW YORK, May, 1836.

Any letter from this city, at the present time, which did not contain some news or statistics, concerning that much dreaded foe, the cholera, would, I fear, hardly be thought genuine, but I think I am supported by facts when I state, that never, at this season of the year, were we in less danger of an epidemic of any serious disease, and never, I am informed by the visiting Physicians of our Dispensaries, were there fewer cases of serious intestinal complications, than at the present time. Our City is in a much more cleanly condition than is usual in the Spring, and all seem to appreciate the necessity of "setting their houses in order," from fear of the cholera, or perhaps, that still more unwelcome visitor, a Sanitary Inspector. These latter gentlemen certainly had a Herculean task before them, apparently, when they entered on their duties, but the system of inspection seems to have been so thoroughly organized, from the very commencement, that we hear of very few complaints, and certainly see its good effects every day. I see, on referring to the record of deaths in this City, for the week ending May 12, that the total number from all causes, was 432. Diarrhœa and miasmatic diseases, 19; typhus fever, 11; typhoid fever, 5. A statement of facts which certainly looks well for our sanitary condition, when it is remembered that the above occurred in a population, according to the census of 1865, of 739,000 people. Through the kindness of my friend, Dr. Elisha Harris, of this City, who is Registrar of the Bureau of Vital Statistics and Records, I am enabled to give the following facts, in regard to the epidemic of cholera, as it occurred on the steamship Virginia. The total number of deaths from cholera, from April 12, the date of the first case, to April 23th, was 51. The total number of choleraic diarrhœa and fully developed cholera, during the voyage, was about 225. The Surgeon of the ship was so overworked, that the exact number was not kept. Every death, however, was unmistakable cholera. Peter Faust, age 35, native of (Little) Elfás, in Holland, whence he came through Rotterdam and Hull, to Liverpool, was probably the first case. He died of cholera the 8th day out from Liverpool,

after an illness of 48 hours. He was apparently perfectly well, until the 4th day of the voyage, and it was not until two days after this, that his sickness attracted his wife's attention. Collapse set in, eight hours previous to his death. The berth which he and his family (consisting of his wife and two little children) occupied, was on the after orlop deck, a deck which is below the water-line of the vessel, in the middle of the ship, being ventilated by hatchways and wind-sails. The second case occurred in a child, found dead on the morning succeeding the previous death. *Within 48 hours* the epidemic announced itself, in all parts of both the orlop and the main decks, where all the steerage passengers (nearly 100,) were berthed. During the five succeeding days, until reaching our harbor, the progress of the epidemic was not essentially checked, except as individual cases of the premonitory diarrhœa were controlled. On the arrival of the vessel at this port, there were about 30 cases of cholera more or less developed and under treatment. Cases continued to occur daily, as long as the passengers remained on board, a period of more than a week. The steamship Illinois having been obtained from the U. S. Government, was then employed to receive the steerage passengers from the infected ship. *But the pestilence was not stayed by this transfer.* Cases occurred daily, and within ten days there was abundant evidence, that the atmosphere of the Illinois had become scarcely less infected than that of the Virginia; *indeed the cholera entirely ceased upon the latter vessel, though the crew and cabin passengers remained on her.* Upon the Illinois, it continued to prevail until the company on board was thinned out, by the return of nearly 400 to the Virginia, after that ship had been cleansed. Subsequent to this distribution of the passengers, no more cholera occurred. In the hospital ship proper there was no evidence of any infection of the ship itself, though it contained, at one time, 100 patients. Two of the nurses, only, suffered from the disease. No other attendant or officer being attacked. The chief Physician had a diarrhœa for three days. The following facts should here be noticed: The Illinois was overcrowded by the passengers transferred from the Virginia. Her ventilation, and the means for purification, were imperfect, neither persons nor clothing could be cleansed, and as a consequence, the infection of cholera

was conveyed into the apartments of that ship, and was then propagated and perpetuated, until the crowd of human beings was thinned out, by transfers to the ship whence they came. The fact that the hospital ship proper, remained free from contamination, demands explanation, and probably it will be found to be wholly owing to the admirable ventilation of that old hulk. The hospital ship was fitted up, under the direction of Dr. E. Harris, in 1859. The vessel (an old steamship,) was cut full of port windows, along the sides, and valved air shafts were extended from above the roof, to her keelson. In the seven years service this ship has performed, she has received every kind of infectious disease, but has not, herself become infected. For the immediate purification of contaminated clothing, the ship is furnished with large vats, into which hot steam and chlorine are injected.

The "England" left Liverpool on the 28th of March, all well on embarking. She was a fine ship, and took a vigorous company of immigrant passengers. Cholera appeared on her, in precisely the same manner as on the Virginia. Her passengers were transferred at Halifax, the ship cleared, and after one half the company had been stricken with cholera, (*one hundred and sixty of whom died,*) the survivors returned to the ship, and sailed for New York, where they were detained in quarantine, on board their ship, for two weeks, during which time no other case of cholera occurred.

In regard to the origin of the disease, there seemed to be no knowledge of any cholera (on the part of the passengers) in the places from which they came, these being mostly Towns in Holland, and from Wittemburg, and Carlsruhe; with some from Denmark, and a few from Towns further in the interior, than the Cities named. The City of Altenburg, a small City of Saxony, is known to have had a few cases of cholera, during the past winter. It is also a curious fact, that in 1849 and 1854, the epidemic, as it then visited Great Britain, came there, through Rotterdam. During the last week of March, and first two weeks of April, 1866, cholera made its appearance and became epidemic, and very fatal, in no less than seven Towns and small Cities of Luxemburg and Holland, from which, and through which, many of these passengers by the Virginia and England, came. In Rotterdam, a low lying City, with

broad streets, cholera made its appearance *immediately upon the departure of the company* that came in the Virginia, and is now raging to a very great extent. No evil result seems to have occurred from the landing of the passengers of the England last week, and the few remaining in quarantine from the Virginia, will probably be allowed to come to the City soon.

But a single case of true cholera has occurred in our City, as yet, and the value of active and prompt sanitary measures was shown eminently in that case, as although it occurred in a tenement house, and was of a very rapidly fatal character, no other person, in this atmosphere, as far as is known, was in any way affected. Disinfectants were immediately and freely used about the premises, the people were advised how to act, a Physician was put on duty at once, as local medical officer in charge of the house and its population; and all measures were put in force that were practicable, to destroy any possible infection that might exist upon the surface of the premises. This is perhaps the first instance, in which a Board of Health in any City, has succeeded in grappling with the *first case* of cholera in an impending epidemic.

We notice several changes in our several Medical Colleges, among the Professors.

Dr. F. J. Bumstead, who is so well known, in this Country, as well as in Europe, through his valuable work on venereal disease, and who has, for many years, been an ardent student of botany, has been appointed Professor of Materia Medica, in the College of Physicians and Surgeons, in place of the late Prof. Jos. M. Smith, who, for so many years, and in so able and satisfactory a manner, filled that Chair. Dr. Henry B. Sands, late Demonstrator, has been appointed adjunct Professor of Anatomy, and Dr. Erskine Mason, Demonstrator of Anatomy. At the Bellevue Hospital Medical College, Prof. W. H. Van Buren, who for many years was Professor of Anatomy at the University Medical College, has been appointed Professor of the Diseases of the Genito Urinary system, while at the latter College, Dr. Wm. Darling (who was Demonstrator at the same College some twelve years ago, but who, since that time, has been practising his Profession in London,) succeeds Professor Van Buren. At the same College, a number of medical gentlemen, eminent for

their application to special branches of our Profession, have been appointed Clinical Professors.

The State Woman's Hospital, under the charge of Dr. Thomas Addis Emmet, of this City, has been, during the past year, erecting one wing of their future large building, at the corner of Fiftieth street and Fifth avenue, and hope, during the coming Autumn, to occupy that portion, which will accommodate about one hundred patients. Since the inauguration of the Hospital, under Dr. J. Marion Sims, some ten years ago, the accommodation for the number of patients has been lamentably deficient, and the Profession will hail, with pleasure, the completion of a building which will, at once, be an ornament to our City, and a blessing to hundreds of females suffering from diseases of the uterus and its appendages. At some future time, a more extended notice of the new building, will be given.

PARIS, April, 1866.

My intention, in this letter, is to give a succinct account of the methods of treatment employed by M. Velpeau in the wards of his service, at the Charity Hospital. For over thirty years, he has been in the habit of collecting observations on every case that presented itself, and at the expiration of each term, these observations are carefully classified. At the Hospital, the treatment is based, to a greater or less extent, upon the important information and practical results derived from the statistical tables, in the possession of the Professor. His wards teem with cases observed in daily practice, and it is highly interesting to witness the simplicity of many forms of his apparatus, as well as the great number of cases brought to a successful termination, by the use of means at the command of every one. I will, therefore, endeavour to review briefly M. Velpeau's ideas and practice, in those cases which come most frequently under observation.

The wards contain seventy-five beds, of which forty-eight receive male, and twenty-seven female patients. The new patients and those who leave the Hospital are noted down daily, in a register kept for that purpose. This system has been adopted, for over thirty

years, and the annual mean number of cases treated averages one thousand. The mortality is generally one in from fifteen to twenty patients, these figures representing the results of a long series of years. The following is the list of affections most frequently met with in the wards: Fractures; diseases of the joints; phlegmons and abscesses; diseases of the lymphatic system; burns and bruises; maladies of the genito-urinary organs; diseases affecting the perineal region, and diseases of the eyes, etc. It will be seen, that the field is extensive, yet the almost daily occurrence of such cases, testifies to their importance, as well as to the necessity of clearly comprehending their treatment.

(A.) *Fractures*.—Nearly a hundred cases come under treatment yearly. The male patients always afforded the greater number. In 1865, there were five deaths from this cause, attended by varied complications. Fractures of the skull usually, of course, terminate fatally. For fractures of the spinal column, M. Velpeau's treatment consists in placing the patient on his back, the head, unsupported by pillows, being kept a little lower than the rest of the body. With this simple care, two patients, out of three observed last year, recovered; that is to say, on leaving the Hospital, they were able to walk and perform their duties regularly, notwithstanding the presence of a deformity at the seat of the fracture. M. Velpeau's conclusion is, that perhaps the danger resulting from such fractures has been exaggerated. *Fractures of the inferior maxillary bone*.—Unless it is difficult to maintain the ruptured parts in apposition, no bandages whatever are applied in these fractures. The pain, as a general rule, suffices to prevent the patient from committing excesses, and has the advantage of preserving him from the annoyance of an apparatus, which, in cases of this nature, is apt to become an instrument of torture. *Fractures of the ribs*.—The treatment of this species of fracture needs reform, at least so far as simple fractures are concerned. In place of the ingenious applications derived from mechanical notions, and employed by respectable authorities, M. Velpeau binds a piece of cloth, about a yard long, by a foot in breadth around the thorax. In fifteen days, usually, the patient is dismissed cured. *Fracture of the neck of the femur*.—Doing away with all the complicated forms of apparatus, usually employed, at

the Charity Hospital, the following simple method of treatment is adopted: The patient is made to lie on his back; the thigh is extended, and the knee is slightly bent over a cushion, which is placed between the bed and the limb. An ordinary sheet is folded, so as to form a cravat, which embraces the ischium. The ends of the cravat are fastened to the foot of the bed, so as to procure counter-extension. A roller, wrapped around the malleoli, secures two bands, which are tied to the foot of the bed, to obtain the necessary extension. With this simple apparatus, M. Velpeau obtains the consolidation of this species of fracture, with half or three quarters of an inch shortening of the limb, and the patient is exposed to as little fatigue as possible. The learned Professor has long insisted upon the fact, that the shortening of the limb, to this extent, does not entail limping. During the last term of lectures, he had occasion to meet with two or three of his former patients, who did not limp, although originally there was a shortening of the member exceeding an inch. This finds an explanation in a deviation—a torsion of the pelvis—which, by degrees, removes the deformity.

The following abridged sketch of a curious case, which lately presented itself, offers an illustration of the successful employment of this mode of treatment, as far as consolidation is concerned: On the 20th of January, 1866, a woman, eighty-one years of age, was admitted, with a fracture of the neck of the right femur. The above mentioned apparatus was applied, although, owing to her time of life, no hope was entertained of obtaining an osseous union. A large bed sore formed, complicated by the appearance of erysipelas, from the effects of which the patient died on the 9th of March. The post-mortem examination revealed a fracture of the neck of the femur, with penetration of the fragments into the great trochanter. The fracture was nearly consolidated, by a callus of *osseous* formation. Owing to the curiosity of this fact, M. Velpeau deposited the specimen in the Musée Dupuytren. I possess the written observation of this case, and a plaster cast of the bone.

Fractures of the leg.—As regards fractures of both bones, a very powerful apparatus would be necessary to combat the muscular masses of the calf of the leg. All the inventions in this line are unable to prevent shortening, which, however, as has been shown,

is not a very annoying complication. For this class of fractures, a simple starch or dextrine bandage is employed. The same species of bandage is applied to fractures of the malleoli. The space of three weeks generally suffices for the removal of the apparatus.

Fractures of the clavicle are consolidated in fifteen or twenty days, seldom, however, without deformity. On the fourth or fifth day after the accident, a dextrinated bandage, fixing the hand of the fractured side on the opposite shoulder, suffices.

Fracture of the neck of the humerus.—The reduction obtained, the arm is bandaged to the side of the thorax, from which it is separated by layers of wadding to prevent excoriation. Fractures of the anatomical neck become consolidated, as well as other species.

Fractures of the body of the humerus.—These require splints and a roller bandage. They are frequently exposed to non-consolidation, the humerus being surrounded by powerful muscles, and situated between the scapula and the forearm, both of which are very movable. Hence the difficulty of procuring immobility of the fragments.

In the forearm.—Fractures of both bones are serious, because, owing to muscular adherences, and the facility with which the interosseous space disappears, the limb may be deprived of its functions.

Fractures of the cubitus alone.—These require attention in the application of the dextrinated bandage for the reasons given above. The same holds good for the radius.

Fractures of the lower extremities of the radius.—Compared by M. Velpeau to the *back of a fork*, this bone may become consolidated, even without a bandage, owing to the mutual penetration of the fragments. Something, however, must be done to remedy the deformity, which would otherwise exist. Here, unfortunately, it is difficult to apply ordinary applications with success. Acting upon a hint, furnished by a Danish surgeon, M. Velpeau bends the hand to a right angle with the forearm. The limb is made to keep this position; a band is wrapped around the hand and forearm, on the dorsal region of which, is placed a graduated compress. This is surmounted by a thick card-board splint, moistened so as to take exactly the shape of the parts. The whole is kept in place by a dextrinated roller.

(B.) *Diseases of the joints.*—(a) *Luxations.*—M. Velpeau reduces all the luxations of the shoulder to *two species*, which comprehend the numerous varieties generally admitted. Thus there are the *postero-external* and *antero-internal* luxations. In the case that occurred, the reduction was obtained by the old process, viz: horizontal traction.

(b) *Sprains.*—The treatment is always successful and unattended by after accidents. This fact should be remembered, for some practitioners entertain the idea, that a sprain is a serious accident. An error, similar to that concerning fractures of the ribs, is accepted by many. The result of thirty years' experience, proves that a sprain is not a serious affection, and produces neither arthritis, nor white swelling. The treatment consists in compression by means of a rolled bandage, and resolvent applications.

(c) *Arthritis.*—The two following means prove very effective in the treatment of this disorder; large flying blisters, applied several times successively around the joint, followed by immobility obtained from the use of the dextrinated bandage. The Professor prefers an immovable apparatus, because the patient can leave his bed, and the limb once enclosed in this kind of mould, the joint is condemned to absolute repose.

The only motions possible are those executed by the *totality* of the limb. To obtain this result, the bandage must be well applied; taking the *knee* for instance, the foot, leg, and thigh must be enclosed in the dextrinated roller. With this apparatus, relief is soon experienced, and in from two to three weeks, the cure is more or less complete.

(d) *Hydarthrus.*—Besides blisters and resolvent applications, the injections with iodine are employed. After having used these injections in a great number of cases, M. Velpeau has come to the following conclusions upon this subject: 1st. They are harmless, and this is an important fact to establish, as the dread of accidents was an obstacle to their adoption. 2nd. They do not prevent the making use of other forms of treatment. 3d. Their efficacy cannot well be doubted, from the number of cases cured by their agency. 4th. Frequent use of this treatment is made, and he has never seen it occasion *anchylosis*. The liquid employed contains

equal parts of water and tincture of iodine, and the operative process adopted is the same as that for hydrocele. At the hospital Lariboisiere, M. Chassaignac has frequently employed injections of *undiluted* tincture of iodine in cases of hydarthrus.

(e) *Diseases of the serous purses and the synovial membranes of the tendons.*—Effusions of an inflammatory, purulent, sero-purulent and sanguineous character, are treated as follows: Puncture with the bistoury, and use detersive injections. The injection with iodine is employed for serous effusions, after the failure of blisters and topical applications. In a case which occurred in 1865, the injection with iodine was used on a young man, who had dropsy of the synovial sheaths at the wrist. After puncture and the injection, the dropsy disappeared, but the serous membrane presented a growth of fungus vegetations.

(C.) *Phlegmons and abscesses.*—This group always affords a large proportion of the number of cases in the wards, and this is easy to understand, for no malady is more frequent than inflammation, which is present in more than two-thirds of surgical diseases. Each region of the body gives rise to particular facts; thus, phlegmons of the head produce great disorders, (in one case observed in 1865, the skin covering the cranium had been dissected by the pus, and could be moved from point to point, like a cap, and yet this patient recovered); as concerns the cheek, circumscribed phlegmons are met with, which may be taken as typical of the species. The difference observed in these phlegmons is due to the lamellar nature of the layer which separates the skin of the cranium from the aponeurosis, whilst in the cheek, the cellular tissue is confined between the muscles and the bones. It will be seen that the explanation is to be sought for, in a knowledge of the anatomical disposition. In the region lying above the hyoid bone, nearly every abscess originates in a ganglion. Suppuration here is consequently circumscribed, as will be seen a little lower, under the heading of “adenitis.” In the lips, where the muscles, the cellular tissue, etc., form an entangled net work, the character of the inflammation is to remain limited, and these abscesses resemble furuncles.

It follows, from the above lines, that the lamellar species of cellular tissue permits the formation of diffused phlegmons, and is

an almost essential condition to their development. A contrary disposition favors the appearance of circumscribed inflammations. The diffused phlegmon, spreading itself over a large surface, dissecting the skin, the vessels and the nerves, frequently leaves great disorders, whereas the circumscribed species is not, generally speaking, to be dreaded. *In four days*, (and the time rarely exceeds this period,) pus is formed in a diffused phlegmon. *At least eight days* must elapse before a circumscribed phlegmon suppurates. Consequently there is only one plan of treatment to be adopted, in cases of the first named order. *After four days have passed* in diffused phlegmons, M. Velpeau makes use of large and multiple incisions. Topical medication proves of no utility. For circumscribed phlegmons, even on the *fourth or fifth day*, it is advisable to apply leeches, flying blisters, and mercurial inunctions. By this means, resolution is occasionally obtained.

Phlegmons of the hand.—The palm of the hand is the region most frequently affected. In the thenar eminence, inflammation often becomes diffused, because beneath the skin there is a loosely woven layer of lamellar tissue, which extends to the thumb. For this reason, whitlows frequently occur. The *hypothenar region* offers the same anatomical disposition, and the same pathological results. In the palm of the hand, the cellular tissue is in small quantity. It forms a tightly knit coating between the aponeurosis and the skin. Hence the disorder is necessarily limited. If, on the contrary, the inflammation originates *beneath* the aponeurosis, it is located in the synovial membranes, which communicate with the fingers and the forearm. This causes the intense diagnostic pain and the gravity of the general symptoms. The pus, hemmed in, passes between the fingers, and reaches the back of the hand. It then extends, by means of the lamellar layer, which exists in this region, over the whole of the back of the hand and the fingers. In such cases, M. Velpeau always makes his incisions in the palm of the hand. There, beneath the induration, the source of the trouble is discovered. A large opening, made at the very outset, prevents the evil and the dissection of the skin, on the back of the hand and fingers.

Whitlows.—The gravity of this affection has, in many cases, been

exaggerated. It is an ordinary inflammation, deriving its special character from the nature of the region. M. Velpeau has established the four following categories: 1st. Whitlows situated beneath the epidermis, present a phlyctenoid appearance, around the matrix of the nail. This species heals without treatment; still it is better to incise the epidermis. 2d. Subcutaneous whitlows have their seat in the cellular tissue, situated between the skin and the fibro-synovial sheaths. At the last phalanx of the fingers, where these sheaths have ceased to exist, the inflammation rapidly assumes the form of periostic paronychia, and threatens the bone with necrosis. From the thumb and little finger, the pus is apt to extend into the thenar and hypothenar regions, owing to the anatomical disposition mentioned above. 3d. The fibro-synovial whitlow is very painful; by means of the synovial membranes, it rapidly reaches the palm of the hand, and frequently extends into the forearm. Should suppuration follow, the functions are impaired; there are stiffness and rigidity of the flexor muscles, as well as of the motions of the hand and fingers. 4th. The periostic whitlow entails, almost always, necrosis of the phalanx. Incisions made immediately are absolutely necessary, in cases affecting the fibro-synovial membranes. It is indispensable to prevent suppuration. For the other varieties, M. Velpeau generally waits until pus has formed.

Anthrax.—M. Velpeau has established certain rules to be followed, when treating this malady. In spite of the objections raised against this plan, the best treatment consists in incisions, which are generally made in the shape of a cross. This has not been found to prove sufficient. The tumour being usually circular in shape, a series of incisions is made to converge towards the centre, thus resembling the spokes of a wheel. These incisions must be extended a little beyond the tumour, into the *healthy tissues*, and at the circumference, be distant about three quarters of an inch, one from another. By following this method, the inflammation is surely checked. As anthrax sometimes ends fatally, the safety of the patient requires energetic measures and warrants the apparent cruelty of the treatment.

(D.) *Diseases of the anal region.*—(a) *Fistula.*—Simple incisions rarely suffice, as there are often recesses containing pus which has

dissected the parts. *These recesses must be opened.* After a first incision, made by placing the knife on a grooved director, a blunt headed bistoury is introduced, and with it are cut the parietes, which divide the purulent collection into cells. M. Velpeau does not employ *ligature* or the "*écraseur*," because these modes of operating do not permit the evacuation of the different chambers which furnish the pus.

(b) *Abscess*.—A fistula generally originates in an abscess. These abscesses may not communicate with the rectum; they may come from the parietes or the interior of the abdomen, or from the neighboring bones. After the evacuation of these abscesses, there may result a complete or an incomplete fistula. Purulent collections in the region of the anus are apt to become fetid, even where there is no communication with the rectum. The same fact may be observed in abscesses appearing in the neighborhood of organs which open into the interior of the body. This is the case in formations of pus near the larynx, in the cheek, etc. A knowledge of this circumstance, at times, may serve to lessen the gravity of the prognosis.

(c) *Fissures* are cured by using a good sized wick, dipped into a pomatum containing litharge.—Here it is important to establish a distinction. A fissure liable to be cured in this manner, is not *really* a fissure. A *real* fissure presents a deep gap with indurated sides perpendicular to the sphincter. In such cases an operation is indispensable. The topical application mentioned above suffices to heal excoriations, in the vicinity of the anus. At some future period, I will continue giving the results of M. Velpeau's experience, as applied to the treatment of the principal diseases which fall under his observation, at the Charity Hospital.

THOMAS LAYTON.

LONDON, May, 1866.

The Medical Profession here, and indeed the nation at large, have just sustained a severe loss in the death of Dr. Thomas Hodgkin, who died on the 5th instant, at Jaffa, in the 69th year of his age. Dr. Hodgkin was born on January 16th, 1798. A seven months

child, he was always delicate and weakly in constitution, but early evinced extraordinary mental power, through careful training of which, he became a most accomplished scholar. He graduated in Medicine at Edinburgh in 1823, and in 1825 he became a licentiate of the Royal College of Physicians of London. A sincere and consistent member of the Society of Friends, his peculiarities in religious belief and in dress, did not prevent his high professional ability and attainments from being appreciated; and he was elected Curator of the Museum and Teacher of Morbid Anatomy at Guy's Hospital. In this position he not only distinguished himself highly, by his accurate and extensive knowledge of the subject to which he had devoted himself, but also conferred great and lasting benefit on the Hospital, by organizing its Museum, of which he edited a classified catalogue. When, however, a vacancy on the Physicians' staff occurred at Guy's, Dr. Hodgkin's claims were passed over, and Dr. Babington, (whose death has also just occurred,) was elected. Dr. Hodgkin took umbrage at this slight, and resigned his appointment. He had a great share in the organization of the University of London, having been one of the first members of the Senate appointed by Earl Russell. He has been connected with the University in this capacity ever since. The Medical School of St. Thomas' Hospital, when in a difficult position, had recourse to Dr. Hodgkin, and with his aid it was reorganized. He became, himself, Curator of the Museum and Lecturer on Medicine, and he induced other men of note to join the staff—among others, Dr. Marshall Hall and Mr. Granger. Shortly after too, through his influence, Mr. Rainey, who has since distinguished himself so much, by his original researches in the domain of minute anatomy, received an appointment in the School. Dr. Hodgkin never seems to have had a large practice. A thoroughly unselfish man, he appears often to have given offence by refusing fees, and it is said that some of his own friends avoided consulting him on this account. In 1857, the sum of more than three hundred guineas was raised by subscription for a testimonial to him, but in no form would he accept it, and the money, at his wish, was given to the Royal Medical College to found a prize, which is awarded biennially to a pupil elected by all his school-fellows. Well known as a scholar and a

naturalist, Dr. Hodgkin was better known in his latter years as a philanthropist. Always kind and warm hearted, of wide and deep sympathies, he has gained the thanks of all who are interested in our common humanity, by his exertions on behalf of the Jews in Morocco. It was while engaged in a similar mission with Sir Moses Montefiore on behalf of the Jews in Palestine, that he met his death of dysentery, brought on it is said, by drinking impure water. He appears, however, to have suffered greatly for years past from symptoms referrible to the large intestine. Dr. Hodgkin was mainly instrumental in the formation of the Aborigines' Protection Society, and of the Ethnological Society, of which he was several times President. He was also intimately connected with many scientific bodies, not only in this country, but also in the continents of Europe and America.

The laryngoscope has not been much improved or altered in form, since its introduction, the chief difference being in the reflector. This formerly consisted of a large circular mirror, perforated in the centre for the eye, like that of the ophthalmoscope, but from its size, it was always making itself obnoxious to the nose of the observer. The reflector now, therefore, is fixed to the forehead by a band passing round the head, and the light thrown from this position is found equally serviceable with that from the front of the eye, and at the same time the instrument is much more easily managed. A small shade can be connected with the lower edge of the mirror, so as to relieve the eye from the glare of the lamp, which latter is best placed, as in ophthalmic observation, on a level with, but behind the patient's head. The laryngeal mirrors are usually three, of different sizes, the smallest being about half an inch in diameter, and the largest, one inch. The lozenge-shaped mirrors are usually preferred to the circular. They are made either of glass or polished steel, but the former, from its being less liable to be scratched or affected by the atmosphere, is most frequently used.

In the throat of a patient whose tongue is more under control than usual, either naturally or from practice, it is easy to examine far down into the trachea; but, generally, in cases of laryngeal mischief, which come under observation for the first time, it is extremely difficult to use the laryngoscope satisfactorily, as that

unruly member, the tongue, refuses to remain depressed and forward, and the presence of the mirror in the fauces is apt to excite spasm. We are, therefore, compelled to get the patients to exercise themselves, for some time in putting the tongue forward and keeping the mouth wide open for a considerable time. And in these laryngeal cases, too, the palate, and especially the back of the tongue, are much more sensitive than in healthy throats, so that great patience is requisite to make a serviceable examination. Its usefulness is very marked, however, in cases of small laryngeal tumours, which may, by skillful manipulation, be readily removed without danger. Dr. Gibb, who has paid great attention to the laryngoscope, also makes use of local applications to the larynx, with the help of the instrument, either by direct contact or by means of a syringe. To the application, by this latter method, of nitrate of silver solution in a finely divided state, he has given the alluring title of "showers of silver."

Dr. Richardson's new method of producing local anæsthesia is becoming very popular here, and its use has already been extended beyond the limits of the minor operations to which it was first applied. The apparatus has been modified and improved, so as to produce a much greater effect in a short time, and when the ether has been pure and the apparatus properly worked, the results have been perfectly satisfactory. On March 14th, it was employed in a case of ovariectomy. The tumour being immensely large, and the woman in a bad state of health, Mr. Spencer Wells, who operated, did not think it advisable to give chloroform, and accordingly the ether spray was made use of, to narcotize the integuments, while the cyst was being cut down upon. This was done entirely without pain, but it was then found that the cyst was very extensively adherent within the abdomen, and while the adhesions were being separated, it was thought requisite to administer a little chloroform, and the operation was completed under its influence. It appears, however, that if the case had been one of simple uncomplicated ovariectomy, the local anæsthetic would have left nothing to be desired.

On March 29th, Dr. Greenhalgh performed the Cæsarian section without chloroform, with the aid of the ether spray. This latter

case appears so interesting, from the perfect success of the anæsthetic, in enabling an operation of such magnitude to be performed, in a completely satisfactory manner, that I think it worth while to give an abstract of the account of it communicated to the Medical Times by Dr. Richardson. The patient was about 30 years old.—Dr. Richardson used a large double-spray producer, provided for the purpose, and narcotized the skin between the umbilicus and pubes, to the breadth of two inches in forty-five seconds, when Dr. Greenhalgh cut down upon the uterus, without the slightest sensation being felt by the patient, who remained perfectly placid. The spray was then directed on the surface of the uterus for a moment, and next transferred to the skin on the right side of the abdomen, so as to stimulate the uterus to contraction. The incision into the uterus was made also painlessly, and Dr. Greenhalgh then introduced his hand for the purpose of delivery. The patient now, for the first time, showed slight signs of uneasiness. The child was removed very readily, and afterwards the placenta; the uterus contracting very firmly, and causing some pain, like labor-pain. The contraction was so rapid and complete, that it was not deemed advisable to put any sutures into the uterus. The operators waited twenty minutes for any hæmorrhage which might come on, during which time the patient talked calmly on various subjects. The sutures in the integuments were then introduced, anæsthesia being produced on each spot, by means of a single fine jet of ether, before the use of the needle. The child, which appeared to be of rather more than seven months, died about an hour after birth, but the mother, on April 4th, (six days after the operation), was progressing favorably, being free from pain, and the wound having healed by the first intention.

Here the local anæsthetic has been tried, and proved successful, in one of the most important operations ever performed. Dr. Richardson calls attention to several circumstances, which tend to prove the advantages of this method over chloroform anæsthesia, in this and similar cases—such as the checking of hæmorrhage; the avoidance of vomiting, which would, probably, have been brought on in such a patient by chloroform; the production of uterine contraction by the cold, and the absence of shock. The operation appears to

have been entirely painless, the pain felt being merely the pain of labor, and that in a very slight degree

Dr. Richardson is now engaged in endeavoring still further to extend the use of his new agent, by adapting it to hæmostatic and caustic purposes. He hopes, by combining tannin or perchloride of iron with the ether, to render the spray a powerful agent in arresting hæmorrhage; and, by combining a powerful caustic with the ether, to make it available for the speedy destruction of parts which it may be desirable to remove in this manner.

One practical remark I omitted to make when speaking before, on this subject. The application of the ether often produces, at first, a considerable amount of smarting in the skin. This is greatly lessened, by the previous application of olive oil, but it is chiefly obviated or diminished, by the anæsthesia being produced as rapidly as possible, and this is to be attained by having a perfectly pure ether, and an apparatus in good working order.

The Obstetrical Society of London, under the able Presidency of Dr. Barnes, has recently held a very successful *conversazione*, at the College of Physicians, at which there was a most extensive and wonderful display of obstetric instruments of all kinds. The meeting was attended by numbers of medical men from the country, (and from the continent of Europe), as well as by those resident in London—among others, by Sir J. Simpson, from Edinburgh.—Among the interesting instruments exhibited were hysteroscopes, by Dr. Tyler Smith and others, Dr. Aveling's polyptrite, two pairs of Japanese short forceps, and also a small pair of Japanese craniotomy forceps, and a number of most formidable-looking cranio-tribes.

Cholera has reappeared in several parts of Europe, including the North Coast of France, so that it is again in close proximity to our shores, and we cannot expect to enjoy an immunity from it through the summer. The International Conference on cholera has commenced its sittings, and it is hoped that the results of the combined investigations of its members will be of great value. The Conference has already decided on recommending the Porte, to stop communication between the Arabian ports and Egypt, in case of another outbreak of cholera among the Mecca pilgrims.

A most interesting account has recently been communicated to the Medico-Chirurgical Society, by Mr. Holmes, of a case of fistulous communication between the intestines and bladder, in which he performed Amussat's operation, eight months ago. The patient is now in good health, the distressing symptoms resulting from the passage of fecal matter into the bladder having been relieved, and the fistula apparently contracting; the artificial anus being, of course, kept open. Colotomy is an operation which is becoming more generally recognized here, not only in cases which, like this, afford a reasonable expectation of recovery, after its employment, but also as a palliative, in cases which, like those of stricture of the rectum, from cancer, manifestly do not admit of cure. Great credit is due to two distinguished surgeons, Mr. Curling and Mr. Solly, for having, by their practice, demonstrated to the Profession at large, the value of the operation in these cases. Cancer of the rectum is known to be intensely painful, the pain being chiefly the result of the peristaltic action and the passage of fecal matter over the inflamed and ulcerated surfaces; and not only is pain so produced, but extension of the ulceration is the natural result, which sometimes aids in perforation of the bowel, and greatly hastens the end of the unfortunate patient's life. An operation which, under these circumstances, can be performed with very little risk, and with the prospect of prolonging life for several months, at least, and of enabling the patient to pass the remainder of his days in comparative ease and comfort—cannot, I think, but be regarded as a great boon to humanity.

A case of cure of spina bifida by injection of iodine, reported in the *Lancet* a short time ago, is, I think, worth noting. Mr. W. M. Coates, Surgeon to the Salisbury Infirmary, who communicated the case, said that he had been led to adopt the treatment by an account in the *Boston Medical Journal*, of some cases treated successfully in this way, by Drs. Brainard and Crawford. The child, when born, had a tumour, the size of a large walnut, at the lower part of the last lumbar vertebra, and upper part of the sacrum. The opening into the spinal canal, which was easily felt, was about half an inch long and a quarter wide. The tumour increased in size, and became very tense, and the covering very thin. When the

child was about three months old, Mr. Coates operated, puncturing the tumour with a Wood's syringe, and drawing off (in successive half drachm portions) two fluid drachms of the contained fluid. He then injected, in the same manner, two fluid drachms of a solution, containing ten grains of iodine and twenty grains of iodide of potassium to the fluid ounce of water. The surface of the tumour was then painted over with collodion. Immediately after the operation, there were marked convulsive movements, the thumbs being drawn into the palms, and the toes pointed. The child appeared ill, and refused the breast for the next twenty-fours, then rallied and rapidly recovered. The tumour was daily painted over with collodion, and it gradually became flatter and denser, by the deposition of white matter in its substance, until about two months after the operation, the cure appeared perfect, and the child, now six years old, has been well ever since.

Mr. Coates also communicated a case of a large ranula, treated by injection of compound tincture of iodine and cured; also, a case of glandular tumour of mamma with cysts, treated in the same way, with the same success. The instrument he used was a Wood's syringe, the nozzle of which is a perforated needle, which can be unscrewed from the body of the instrument, so that it can be used for drawing out fluid, and injecting successive quantities of the iodine solution, without withdrawing the needle.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A TREATISE ON THE PRINCIPLES AND PRACTICE OF MEDICINE.
Designed for the use of Practitioners and Students of Medicine.
By AUSTIN FLINT, M. D., Professor of the Principles and Practice of Medicine in the Bellevue Medical College, etc. H. C. Lea.
1866. pp. 817. Price \$6.

The author of this work is well known, personally and Professionally, throughout the United States, having filled positions of influence and distinction, at the North, South and West.

He does not come for the first time, before the Professional world, as an author, for his works, on the diseases of the heart and lungs, are familiar to all who do not appeal exclusively to foreign publications, for recreation and improvement. The style of Dr. Flint is terse and severe, his phraseology being totally unadorned with those graces of rhetoric, which are rapidly becoming orthodox and legitimate, in the discussion of even the most abstruse subjects of Medical and general Science. The best modern authors in Medicine, Surgery and Obstetrics, have abandoned the obsolete conception, that metaphor and simile and illustration belong only to the pages of secular literature, and the patient student, in modern times, finds, that the most important and recondite problems are logically analysed, in ornate and acceptable phraseology. It is certainly desirable, in Medical literature, that an author should avoid wearying the reader, by an orthodox adherence to the black letter style of professional literature, and by recollecting, that in mental assimilation, as in physical, variety is specially necessary and acceptable.

Dr. Flint occupies, in his therapeutical views, that middle ground which is, popularly, supposed to be most conducive to safety.—Heroic means are almost entirely discarded, and, in common with the New York School of Medical teachers, he relies chiefly upon the recuperative powers of nature. Mercury, antimony and the lancet are consigned by him, in a great measure, to that Museum of Professional curiosities which the great Curator, Time, is rapidly collecting for our warning, edification and amusement. To a certain extent, the best Physicians approve the rapidly increasing proscription of heroic medication and justly regard homœopathy, as a suggestive protest against therapeutic extravagance and fanaticism, but it is proper to closely scrutinize these new doctrines, so popular in America and Europe, which inculcate an almost exclusive reli-

ance upon the restorative powers of nature. The prudent and truly eclectic will still regard antimony and mercury and blood-letting, when judiciously employed, as being among the most valuable weapons wielded against the overwhelming invasions of disease.

Without attempting a labored analysis of Dr. Flint's teachings, it may be sufficient to say, that, with the exception of an occasional disposition to a too exclusive reliance upon the "conservative" forces of nature, his views are eminently just, practical and judicious.—No author, living or dead, should be accepted as a uniformly safe or reliable guide; for accepting the patent truth, that it is distinction to be a true teacher of one subject, it is manifest, that error is inevitable, where one essays to be a guide, in many. No work on the Practice of Medicine is reliable and specially valuable on more than a few subjects, and he who would take the teachings of any single author, however distinguished, as his exclusive guide in Practice, is hopelessly committed to a future of mortification, disappointment and danger. Monographs are, therefore, rapidly and justly becoming the best companions of the library. Though there are views taught by Dr. Flint, which would not be unquestioningly accepted, these are comparatively few, and the work, as a whole, may justly be regarded as a useful addition to the Medical library. With the introduction of a few of the rhetorical graces in phraseology, Dr. Flint's works would be more acceptable, and, certainly, not less useful and reliable.

MISCELLANEOUS.

REPORT OF THE RICHMOND MEDICAL JOURNAL COMMISSION.

RICHMOND, VA., May 21st, 1866.

DRS. GAILLARD & McCHESNEY :

Gentlemen:—Actuated, we trust, by the same humane and philanthropic feelings, which prompted you to institute a Commission on Artificial Limbs, its members, after two weeks of constant and laborious investigation, beg leave, through ourselves, their committee, to submit, to your disposal, the following report of their proceedings.

The Commission convened, at the Spotswood House, in this City, on Tuesday, the 1st instant, at 10 o'clock, A. M. The names of the gentlemen constituting the Commission, were announced as follows :

James Bolton, M. D., Richmond, Va.; Jas. L. Cabell, M. D., University of Va.; J. Herbert Claiborne, M. D., Petersburg, Va.; J. S. D. Cullen, M. D., Richmond, Va.; J. A. Cunningham, M. D., Richmond, Va.; F. H. Deane, M. D., Richmond, Va.; A. M. Fauntleroy, M. D., Staunton, Va.; M. H. Houston, M. D., Richmond, Va.; L. S. Joynes, M. D., Medical College of Va.; Hunter M. McGuire, M. D., Med. Col. of Va.; W. A. B. Norcom, M. D., Edenton, N. C.; W. O. Owen, M. D., Lynchburg, Va.; A. E. Petticolas, M. D., Med. Col. of Va.; W. S. Scott, M. D., Fredericksburg, Va.; W. Selden, M. D., Norfolk, Va.; Howell Thomas, M. D., Richmond, Va.; F. B. Watkins, M. D., Richmond, Va.

Of this number, the following gentlemen made their appearance :

Drs. Bolton, Cabell, Cullen, Cunningham, Houston, Joynes, Thomas, Watkins.

At a subsequent period, Drs. Norcom, of North Carolina, Fauntleroy, of Staunton, Va., Owen, of Lynchburg, Va., and McGuire and Petticolas, of Richmond, Va., appeared, and being afforded a full opportunity of examining the limbs previously presented, added the weight of their opinions to the decisions of the Commission.

The Commission was permanently organized, by the election of Dr. J. A. Cunningham, as President, and Drs. James Bolton and Howell Thomas, as Secretaries. The hours between 11 o'clock, A. M., and 3 P. M., and between 8 and 11 P. M., of each day, were adopted for the regular sessions of the Commission.

After the transaction of some unimportant business, the Com-

mission proceeded at once to the performance of the work before them. Before announcing their decision, however, it will be proper to make some prefatory remarks.

The construction of artificial limbs, necessarily involves the application of many mechanical and philosophical principles, to the attainment of a common object, the restoration of the wearer to powers of locomotion, approximating as nearly as possible to those afforded by the natural limb. The discussion of these general principles, in their application to different objects, and in their relative importance, necessarily occupied much of the time of the Commission. The time thus spent, however, was not the least profitable in the attainment of their object, nor was it permitted to interfere with a distinct and thorough examination of every structure, submitted to the inspection of the Commission. Each proprietor of a limb, was allowed as much time, as he desired, for demonstrating its structure, and for illustrating its peculiar advantages, and when he had finished, an opportunity was also afforded to all members of the Commission to ask questions, on such points, as required explanation or elucidation. This course was, in fairness, due as well to the proprietors and patentees of limbs, as to the different members of the Commission, and if any proprietor failed in setting forth the full advantages of his limb, the fault was with himself and not with the Commission. So, also, if any member of the Commission failed to obtain the knowledge necessary to an intelligent judgment, the fault was with himself, and not with the organization. These facts, in the history of the Commission, are mentioned, in order to obviate any possible imputations, by disappointed exhibitors, of unfairness in the mode adopted throughout these investigations.

To discuss and determine the relative importance of all the general principles involved in the construction of artificial limbs, and the relative value of each principle in its mode of application to individual limbs, would require a voluminous report, far transcending the limits allotted to your Commission. Had it been possible to determine, accurately, the relative importance of each general principle, in its special application to the structure of individual limbs, then, by a simple mathematical analysis, the relative value of each limb might have been determined, by the number of important principles embodied in its structure. Such a course, however, even if possible, was not deemed practicable, and if practicable, it is more than doubtful, whether it would have led to safe and reliable conclusions. It was, therefore, deemed best, for each member of the Commission, to weigh, in his own mind, the importance of the general principles involved, and to examine, for himself, their successful application in each case, to the purposes of practi-

cal utility. The *tout ensemble* of each limb was left as the guide to individual judgment, and a majority of the members of the Commission determined the relative merits of the different limbs.

With these general explanatory remarks, we will proceed to the more direct operations of the Commission. The whole number of artificial legs examined, was twenty-five, presented by twenty-three different proprietors and patentees. We present the names of the proprietors and patentees, as follows, according to the order adopted in the examination of their patents:

1. B. F. Palmer, Philadelphia; 2. J. H. Wells, Charlottesville, Va.; 3. Dr. E. D. Hudson, New York; 4. H. A. Gildea, Philadelphia; 5. R. Clement, Philadelphia; 6. Wm. Selpho & Son, New York; 7. Salem Leg Co., Salem, Mass.; 8. Jewett Leg Company, Washington, D. C.; 9. E. Spellerberg, Philadelphia; 10. George Leacock, Baltimore, Md.; 11. John Condell, Plainville, Conn.; 12. D. W. Kolbe, Philadelphia; 13. National Arm and Leg Co., New York; 14. Dr. H. L. Byrd, Augusta, Ga.; 15. J. W. Weston, New York; 16. D. De Forest Douglass, Springfield, Mass.; 17. Southern Arm and Leg Co., Madison, Ga.; 18. Dr. Douglas Bly, Rochester, N. Y.; 19. A. A. Marks, New York; 20. American Arm and Leg Co., Washington, D. C.; 21. J. Hanger, Parkersburg, W. Va.; 22. D. H. Reinhardt, Baltimore, Md.; 23. Monroe & Gardiner, New York.

Of the whole number, it may be said, that they displayed a wonderful degree of artistic skill and mechanical ingenuity. Separated from the rest, any one of them would have been considered a very tolerable substitute for the natural member. Compared with each other, superiority of design and execution soon became manifest, and although they all differed in some minute details, yet it was soon ascertained, that they could all be comprehended and classified under a few broad general principles. Lightness and durability of material; perfect adaptation of the socket to the stump; the proper disposition of weight among the different parts; facility and noiselessness of motion; the power to recover motion, in parts where it is liable to be lost by friction; non-liability to derangement; facility of repair, when out of order, without a resort to the aid of the manufacturer, constitute some of the grand essentials in every artificial limb, to the attainment of which, all minor appliances must necessarily be directed. By almost common consent, among the manufacturers themselves, some light wood, of known durability, such as willow or bass, covered with calf-skin, was selected as material for the external structure, and this met with the full approbation of the Commission. As no exclusive right to the material used, was claimed by any of the patentees, it may be proper to state, in this connection, as a caution to manu-

facturers, and as a guide to purchasers, that, in the estimation of the Commission, no limb ought to be accepted, as reliable, which has sheep skin substituted for the raw calf, as a covering to the wood. Experience has proved, that sheep skin soon rots, cracks, and peels off, thereby rendering the limb comparatively worthless.

Another fact forced itself, painfully, on the minds of the Commission, which was, that no reliance was to be placed upon the value of published testimonials. One limb came just as well recommended as another, and we feel constrained to caution the public against being influenced by such documents, and to enter our protest against the freedom with which such testimonials are usually given. Even the testimony of the numerous persons, who presented themselves wearing artificial limbs, was as strong in favor of the worst as the best, each being convinced of the superior merit of the patent which he wore.

One principle, universally recognised by the Commission, was, that the socket of limbs should be made of solid material, susceptible of a high degree of polish, and admitting of being accurately carved to fit the inequalities of the stump.

A second principle, generally accepted, was, that in parts requiring motion, metals of the same kind, should not, whenever avoidable, be brought in apposition; difference of material, in opposing surfaces, moving one upon the other, being an important element of durability.

Another consideration, pressed itself forcibly on the attention of the Commission; that much of the practical utility of any limb, will depend upon the care and judgment exercised in the selection of materials of all kinds, and upon the skill and honesty manifested in the workmanship. A limb of inferior design, composed of the best materials, and constructed by a skillful and conscientious workman, should have preference over one of superior design, composed of indifferent material, and constructed by careless or dishonest workmen.

These general considerations, are presented, because the objects which they embrace, are patent to all, and because a knowledge of them, may protect those in search of limbs, at least to some extent, from the dangers of imposition.

In analyzing the elements of motion, in artificial limbs, they resolve themselves at once, into structures admitting of motion and forces for causing, directing and controlling motion. Of the first, or structures admitting of motion, three or four varieties of joints were presented, each embodying a distinct general principle; the ball and socket; the hinge; the mortice and tenon; each with different varieties of construction. Of the latter, or the

forces causing, directing and controlling motion, there were presented springs of different materials, of many different structures, exerting power in different modes, and for various purposes. India rubber, both solid and in webs, acting by compression and by extension; spiral springs of steel and brass, acting by compression, extension and torsion were found as the motive power, variously applied in all the limbs submitted for examination. The means used for preventing noise, consisted in the interposition of soft substances, such as leather, buckskin, felt and caoutchouc, between opposing surfaces, and those for "taking up lost motion," consisted in screws, convenient of access to the wearer, and perpetual springs, of different material, variously modified and differently applied. Other minor principles and illustrations, are omitted, because their introduction and discussion would only perplex the mind of the reader, and add nothing to the weight of the decisions of the Commission.

In contemplating the whole number of artificial legs presented, it was considered that the objects of the Commission would be best subserved, by selecting a limited number, as being entitled to the award of superior merit. In adopting this course, it was no part of their intention to pass a sentence of demerit on those that were excluded, and it is but a simple act of justice to state, that it was a matter of no little difficulty to decide, between the relative merits of some of those included in the list, and some of those excluded from it. In fairness to all parties, a list of the whole, is furnished in the commencement of this report; not in order of their respective merit, but in the order in which they were presented for examination.

It will be observed, that, in the selected list, two legs are placed on an equality, at its head, and it may be proper to give an explanation of this circumstance. These limbs occupied the place of superior merit, each in the class, under which it was respectively arranged, and as the Commission, all things considered, were unable to agree on the comparative merits of these two limbs, it was decided to place them both on an equality, as to their just claims to public consideration.

With these general remarks, explanatory of the conduct of the Commission, we present a list of eight proprietors and patentees of legs, arranged, in the judgment of the Commission, according to their respective merits:

1st. W. Selpho & Son, best \$125, plain \$100, Government contract \$75; Douglas Bly, (lateral motion of ankle joint,) best \$175, plain \$150, Gov. contract \$120.

2d. B. F. Palmer, best \$150, Gov. contract \$75.

3d. D. W. Kolbe, best \$150, Gov. contract \$75.

4th. Douglas Bly, (Army and Navy, without lateral motion in ankle joint,) best \$100.*

5th. Richard Clement, best \$150, Gov. contract \$75.

6th. H. A. Gildea, best \$100, Gov. contract \$75.

7th. E. D. Hudson, best \$150, Gov. contract \$75.

8th. American Arm and Leg Company, best \$150, Government contract \$50.

9th. Douglas Bly, (Army and Navy leg modified,) best \$50.†

In the above list, are included those legs, adapted or capable of adaptation to all amputations, above and below the knee joint, including Syme's and Pirogoff's operation. The Commission desire, however, that special attention should be directed to the only substitute presented, for the loss sustained by Chopart's operation. This was furnished by Mr. R. Clement, and, in the estimation of the Commission, it is calculated to meet, fully, all the indications required by such a deformity.

ARTIFICIAL ARMS.

The complexity of structure and variety of function, manifested in the natural arm and hand, will at once indicate the hopelessness of all efforts at successful substitution. Even in this hopeless field, the results of ingenious industry, as exhibited to the Commission, were such as to elicit general surprise and admiration. Although wanting in that wonderful cunning, accorded to the natural hand from time immemorial, yet in symmetrical proportion and artistic beauty, some of the imitations presented, went far to rival their perfect originals. Even in their automatic motions, some of them are wonderfully adapted to meet many of the ordinary wants of everyday life.

The remarks made with regard to artificial legs, will equally apply to artificial arms and hands. They can all be comprehended under a few general principles, which admit of easy classification, and may be concisely stated, as the capacity for motion and the power of producing and controlling motion.

As with the legs, so with the arms—the Commission decided to recommend only a limited number, as entitled to priority of consideration. The whole number of arms presented was twelve, exhibited by as many proprietors and patentees. The names of the proprietors are as follows:

B. F. Palmer, E. D. Hudson, W. Selpho & Son, D. W. Kolbe, National Arm and Leg Company, John Condell, E. Spellerberg, Marvin Lincoln (Boston, Mass.), H. A. Gildea, Southern Arm and Leg Co., A. A. Marks, J. M. Grenell & Co., (Koeller's Patent.)

* If measurements are sent by mail \$65.

† If measurements are sent by mail \$40.

Four was fixed upon, as the number to be selected, but owing to peculiarities demanded by different wants, it was found necessary to arrange them, under two distinct classes. A moment's reflection will render it obvious to every one, that the same arm which would be highly useful to a person who had lost but one of his arms, would prove utterly worthless to one who had lost both. The latter condition rendered the introduction of automatic motion, subordinate to the muscular power of the wearer, an element of prime necessity, in the structure of an artificial arm. Governed by this consideration, the Commission divided the arms into two classes. 1st. Those adapted to persons who had lost both limbs; and 2d. Those adapted to persons who had lost but one.

Below, the arms selected, are arranged under their respective classes, in the order of their merit:

First Class.—For Amputation of both Arms.

- 1st. { National Arm and Leg Co., } Best, \$130 Gov. Cont't, \$110
 { Southern Arm and Leg Co., }
 2d. John Condell, (for four or more inches of stump,) Best, \$175,
 Government Contract, \$150.

Second Class.—For Amputation of one Arm.

- 1st. J. M. Grenell & Co., (Koeller's Patent,) with prehensile power, \$150. Koeller's Patent, without prehensile power, \$70.
 " for forearm, \$35.
 2d. Marvin Lincoln, arm or forearm, \$50.

In close connection with the subject of artificial arms, the Commission desire to notice, with special commendation, the apparatus exhibited by Dr. E. D. Hudson of New York, for all the varieties of resection of the arm. This apparatus is intended to compensate for the loss of bone, either in whole or in part, and seems admirably adapted to the attainment of such an object. A close examination of the principles upon which this structure is founded, warrants the Commission in recommending, with much confidence, its adoption by such of our fellow-citizens, as are so unfortunate, as to stand in need of such appliances. The Commission likewise accorded their approval to the apparatus, presented by the same gentleman, designed to compensate for paralysis of the extensor muscles of the hand.

This finishes our report of the proceedings of the Commission, and of the results of its investigations and deliberations. We might

have entered much more fully into scientific analysis and general detail, but such a course would only have wearied attention, without subserving, in any degree, the interests of those *for whose special benefit the Commission was organized*.

That all Patentees should be satisfied with the decisions of the Commission, is not to be anticipated. Like all human organizations, its members may have erred, but in their errors, they can at least claim singleness of purpose in their desire to select merit for its own sake, and that in the decisions made, they have not been influenced by any bias or personal predilection.

It gives us pleasure to state, in conclusion, that nothing occurred, during their entire session, to disturb the perfect harmony and good feeling of the Commission, and that the proprietors and patentees of limbs, in their intercourse, with its members, exhibited a courteous and gentlemanly bearing towards their competitors, which was highly creditable to themselves, and which, in the estimation of the Commission, detracted in no degree from their meritorious claims.

All of which is respectfully submitted.

M. H. HOUSTON, M. D.,
J. BOLTON, M. D.,
L. S. JOYNES, M. D., } Committee.

RICHMOND, May 23d, 1866.

To the Editors of the Richmond Medical Journal :

Gentlemen—The accompanying report was read before the Commission, at a special meeting convened for that purpose, on the 22d ultimo, and after being adopted, is, in accordance with the desire of the Commission, transmitted for your disposition.

Respectfully, your obedient servant,

J. A. CUNNINGHAM, M. D., President.

JAMES BOLTON, M. D.,
HOWELL THOMAS, M. D., } Secretaries.

The following resolutions have been received :

RICHMOND MEDICAL JOURNAL COMMISSION, }
SPOTSWOOD HOTEL, May 15th, 1866. }

To the Editors of the Richmond Medical Journal :

GENTLEMEN:—We have the honour of communicating to you, a copy of the following resolutions, unanimously adopted by the Commission, and ordered to be transmitted to you by the Secretaries:

Resolved, That the thanks of the Commission, be tendered to the Proprietors of the Spotswood House, for the use of their large and commodious room, and for the liberal provision made for its comfortable occupancy by the members of the Commission, during their sessions.

Resolved, That the thanks of the Commission be likewise tendered to Messrs. A. H. CHRISTIAN & Co., for their gratuitous and abundant supply of elegant stationery of all kinds, for the use of the members.

Resolved, That the thanks of the Commission, as well as of the Public at large, are eminently due to Drs. GAILLARD and MCCHESENEY, Editors of the RICHMOND MEDICAL JOURNAL, for their humane and intelligent forethought, in originating this Commission, and for their warm zeal and untiring industry, in securing its successful organization.

Resolved, That the Secretaries be requested to transmit a copy of the foregoing resolutions to the parties relatively interested, and to the Press for publication.

Resolved, That the cordial thanks of the Commission are hereby returned to the President and Secretaries, for the persevering patience and courtesy displayed by them, in the able performance of their very arduous duties.

Very Respectfully, Your Obedt. Serv'ts,

(Signed)

JAMES BOLTON, M. D., }
H. L. THOMAS, M. D., } Secretaries.

NOTE.—The "Richmond Medical Journal Commission" has not adjourned permanently, but has kindly consented, at the request of the Editors of this Journal, to obtain, through a Committee of its members, the names, numbers and address of all those, in the State of Virginia, who lost limbs, during the late war, and tabulating these facts, with all other necessary information, to present a full report of their proceedings, with a copy of the report in regard to artificial limbs, to the Legislature of the State, at its next session.

The following gentlemen were appointed as the Committee of the Commission: Drs. F. B. Watkins, L. S. Joyues, J. S. D. Cullen, Hunter McGuire, and Howell Thomas, of Richmond, Va.

All aid and information extended to these gentlemen, by the Public and the Press, will be fully appreciated.—Ed.

FAIRFAX C. H., VA., May, 1866.

To the Editors of the Richmond Medical Journal :

Last week, (4th instant,) I attended rather an uncommon obstetric case—delivering a respectable married coloured woman of *four* children at a birth—three girls and a boy; the strangest part is, *they* were *perfectly independent of each other*—having their own membranous sac, containing about a quart of liquor amnii, distinct placentas, &c., &c. The children were perfectly developed—very small, same size—they only live! some hours, and cried, lustily, when born.

With much respect,

Yours truly,

FREDERICK BAKER, M. D.

P. S.—I forgot to write that the woman is doing well. This is her twelfth confinement, and she has had twins twice before.

During the period of gestation, with one of her children, (a stout, active boy, now aged 13 years,) she was frightened by a black snake, and, ever since *her son's birth*, his body and extremities, not including the face or hands, have been covered *all over* with something like a *snake's skin*.

F. B.

The Richmond Times states, that a terrier dog, the property of Mr. McKiel, of Richmond, Va., was accidentally locked in the rubbish-room, and remained twenty-one days, without food or

water. When found, it was reduced, almost, to a skeleton, but was still living, and has since recovered, entirely, from the effects of its long fasting. Physicians assert, that the longest case before known, of an animal existing, without food or water, was fourteen days.

COAL TAR AND PHENIC ACID.—At a late sitting of the Société Impériale et Centrale d'Agriculture, M. Chevreul communicated a highly interesting paper, by M. Lemaire, on the use of coal-tar and phenic acid, (also called *phenol* and *carbolic acid*.) in destroying parasites, and ridding both plants and animals of them. A very small quantity of phenic acid, benzine, or aniline will destroy microphytes, (mould, microscopic mushrooms, &c.) and a great many radiata, mollusca, insects, and vertebrata. All the inferior creation avoid the emanations of those substances. Thus, a watery solution, containing one per cent. of phenic acid will instantly destroy the *acarus*, which causes the disgusting disease called the itch. But this solution would be too strong for the destruction of the microscopic plants that attack the vegetable kingdom, since it would destroy, either entirely or partially, the plant it was intended to save. M. Lemaire, therefore, recommends, in the case of the oidium, for instance, that three per cent. of coal-tar be intimately mixed up with earth or sand, and laid about an inch thick all round the root of the vine. Some 20 vines, treated in this way, yielded an excellent crop, while an equal number, adjoining the former, and left to themselves, had all their grapes utterly destroyed. When insects are to be kept away from plants, two different cases may present themselves; either the plant is, as yet, free from them, or it has already been attacked. In both cases, the above-mentioned coal-tar sand will perform its office with infallible efficacy. Snails, slugs, larvæ, or perfect insects, will avoid all plants thus protected so long as there is a volatile principle left in the coal-tar, which, when exhausted, should be renewed. This sort of coal-tar powder has another remarkable effect. When introduced into the soil, in proper proportions, it will not only cause all insects to disappear, but also increase the vigor of the plants themselves. If manure be watered, before being dug into the earth, with water containing one thousandth part of phenic acid, a similar, but less durable effect will be obtained. M. Lemaire also says, that corn and all dry agricultural produce in garners or barns, may be saved from the ravages of mouldiness or noxious insects, by merely impregnating the air with the emanations of phenic acid.—*Galignani*.

A traveller in Afghanistan gives us a curious insight into native surgery:

"The Afghans, from their rough and hardy mode of life, acquire, by experience, a number of very practical, though, to be sure, uncouth methods of righting themselves, their horses and cattle, that may suffer from accidents. Their operations for the reduction of dislocation in the human subject, are most original, and, if report speaks at all truly, equally successful.

For a dislocation of the thigh, the unfortunate patient is sweated for three days in a dark room, the atmosphere of which is heated by fires kept burning night and day; and the effects produced by this high temperature are increased by drenching the patient with copious draughts of warm rice-water, or thin gruel. During the interval that this treatment is enforced on the patient, a fat bullock or buffalo is tied up and fed, *ad libitum*, with chopped straw, flavored with salt, but is rigidly denied a drop of water. On the third day, the patient is made to ride the bullock astride, a felt alone intervening between himself and the animal's hide; his feet are next drawn down, and fastened tightly under the animal's belly, by cords passing round the ankles. All these preliminaries arranged, the animal is then led out to water, and drinks so greedily and inordinately, that its belly swells to nearly double its former size; the traction produced by this, on the dislocated limb, is sufficient to bring the wandering bone back to its socket."

[*Cincinnati Journal of Medicine.*

A FACT THAT SHOULD BE KNOWN TO ALL.—The best vehicle for chloroform in its administration is milk. Those who have used it state, that nothing more acceptable can be desired, by either patient or Physician.

THE CLIMATE OF AFRICA.—Dr. Livingstone recently stated in a lecture, that no less than forty missionaries succumbed to the deadly effects of the climate of Africa before a single conversion took place.

REPORT OF AN ENGLISH BURIAL BOARD.—The Liverpool (Eng.) Burial Board has adopted : report in favor of abolishing interments on Sundays, on the grounds that the normal effect of such funerals is bad; that they were conducted with less decorum than on other days, and were the direct cause of contagion and death.

MEDICAL NEWS.

DR. BENCE JONES' DISCOVERY OF A QUININE-LIKE SUBSTANCE IN THE ANIMAL BODY.—At the last Friday evening's meeting of the Royal Institution, Dr. Bence Jones gave a singularly lucid and interesting account of one of those discoveries which, from time to time, open up entirely new fields of research. It seems that Dr. Bence Jones, some months ago, desired to detect the presence of quinine in the animal body. For this purpose, a test was essential, and the test he adopted, was that peculiar influence, (fluorescence,) of this alkaloid on the refraction of light, whereby it makes the dark part of the spectrum, beyond the violet ray, luminous.—Having fixed on this as a test, and prepared standard solutions of quinine, so that he might be able to get something like a notion of quantity, by comparing the effects of solutions of various strengths on the spectrum, he set to work on a guinea-pig—gave the creature three grains of quinine, then tested the blood, and crystalline lens, and other parts, and obtained the most satisfactory evidence of the presence of quinine. Luckily, however, for science, (though, as may be imagined, it was a source of great perplexity at the time,) Dr. Bence Jones, in order to complete the experiment, submitted the same parts of a guinea-pig, which had taken no quinine, to the same test, and out came the same reaction; every part of the *non-quinized* animal—heart, liver, kidney, and lens—when treated like bark, in such a manner as to dissolve out and purify any alkaloid that might be in them, gave the same spectral reactions as similar solutions did from the animal that had taken quinine. Here was a puzzle! Undismayed, however, Dr. Bence Jones set to work to make out the mystery. He soon convinced himself that the tissues of all animals contain a something which, if dissolved out like quinine, gives the same fluorescent reaction with light. One solution of quinine, interposed in the rays of light, cuts off the fluorescence of another; so does a solution of the quinine-like substance; and so does each upon each, interchangeably. Common salt and hydrochloric acid, also, lessen the fluorescence of both. This quinine-like substance, too, can be demonstrated in the tissues (in the lens) fresh, or preserved in glycerine; and can be demonstrated in the living, as well as in the dead. Mr. Bowman had shown, it in the eyes of his dog, and Dr. Bence Jones sat down before the electric light, which Professor Tyndall adjusted, so as to let the audience see the strange fluorescent gleams from the interior of his eye. It has been found impracticable, as yet, to isolate this substance, so rapidly

does it undergo oxidation; but Dr. Bence Jones had carried out an interesting series of investigations, which convinced him that this quinine-like substance was part of the natural constituents of the body; and that, judged by the quantitative reactions, the quantity of it was temporarily increased, by giving quinine. It was shown, by this means, that quinine, in a very few minutes after its administration, passes into every tissue of the body; that its maximum effect is produced in two or three hours, and then decreases, till it disappears, in about seventy-two hours. The demonstration of its presence, in the crystalline lens, gave ground for hope, that substances might be found, hereafter, to remedy perverted nutrition of the non-vascular tissues—as cataract, and, even, the deposits of gout in cartilages. Then, what a glimpse these investigations afford of the possible *modus operandi* of quinine in the cure of ague! We call quinine a “specific,” a term which indicates our notions, or want of notions, of its action, and nothing more. But, is it not possible that ague may depend on the absence of a natural quinine-like substance from the tissues? That quinine may supply this want, (thus, by-the-by, showing the futility of all attempts to distinguish between food and physic,) and that arsenic, on the other hand, may act within the body as it does without, by preserving certain matters from decomposition? Such is a rough note of this very interesting address, which was as valuable for what it promised for the future, as for what it showed at the present.

[*Medical Times and Gazette.*

SULPHATE OF QUININE IN PHOTOGRAPHY.—The window of a photographer’s “dark room” may be painted with a mixture of an acid solution of sulphate of quinine in dextrine or gum arabic. The mixture should be applied on a sheet of paper, and this placed on the glass, and, it is said, no actinic rays, even on the brightest day, can pass a window so prepared.

THE IRIDOSCOPE.—At the last sitting of the Academy of Sciences at the Institute of France, Dr. Jules Cloquet presented a very interesting optical instrument, called an “Iridoscope” by its inventor, M. R. Houdin, and by means of which the spectator may see deeply into the interior of his own eyes, and follow the movements which take place during the process of vision. The Academy referred the instrument, and the paper which accompanied it, to MM. Becquerel and Foucault for examination.

PROF. HAMILTON is preparing a new edition of his work on *Fractures and Dislocations*.

NATIONAL QUARANTINE.—The following concurrent resolution has been adopted by both Houses of Congress:

“Resolved, by the Senate and House of Representatives of the United States of America, in Congress assembled, That the Secretary of the Treasury be, and he hereby is authorized to make and carry into effect such orders and regulations of quarantine as, in his opinion, may be deemed necessary and proper, in aid of State or municipal authorities, to guard against the introduction of the cholera into the ports of the United States; and the Secretary of the Treasury is further authorized to direct the revenue officers, and officers commanding revenue cutters, to aid in the execution of such quarantine and health laws as may seem necessary.”

CINCHONA PLANTATIONS.—The last report on the cultivation of cinchona in Bengal states, that during the month of July last, 14,000 cuttings were planted, a greater number than has ever been obtained at Darjeeling. The total number of plants, cuttings, and seedlings amounts to \$1,000. The altitude at which the plantations are situated varies from 1,825 feet to 5,500 feet above the sea level.

THE QUEEN.—We are glad to announce, that the first occasion, since the death of the Prince Consort, on which her Majesty has been pleased to bestow her patronage upon any sort of public entertainment, is as patroness of a concert, in aid of the funds of a medical charity—viz., the University College Hospital.

[*London Lancet.*

HOMŒOPATHY has signally failed in the treatment of the rinderpest in England, where it was fairly tested.

OBITUARY.—Died, recently, in Edinburgh, Scotland, Dr. James Simpson, son of Prof. James Y. Simpson, a young Physician of great promise.

A WEALTHY GENTLEMAN of Boston has placed a sum of money in the hands of an architect, for erecting a monument in that city to commemorate the discovery of the anæsthetic properties of Ether.

MAXIMILIAN has founded a Medical School in Mexico, which requires seven years to complete the course of studies; about two hundred students have been in attendance.—*Exchange.*

MEDICAL STUDENTS AT NAPLES.—There are about 4,000 students of medicine in Naples.

EDITORIAL.

During the past month, The Richmond Medical Journal Commission, organized for the purpose of examining the models of all artificial limbs made in America, has been in protracted session, in this City. The labours of the Commission extended through a period of two weeks, and not less than sixty hours were given, by this body, to a faithful and efficient analysis of all limbs submitted for inspection. The thanks of the Profession and the Public are specially due to these gentlemen, for their charitable and philanthropic exertions. Many of the members who attended had either to onerously tax themselves, in the rapid discharge of those duties, expected by the invalid public, or had, otherwise, to solicit the obligation of this duty, from their friends, in order that the labours assumed, in connection with the Commission, might be honestly and faithfully discharged. Many of the members came from a distance, at great personal expense and inconvenience, with no other expectation of reward, than the memory of having performed a generous and philanthropic work. The Editors of this Journal are under special obligations to these gentlemen and embrace the first practicable and appropriate opportunity of returning to them their prompt and grateful thanks. No labour, in the history of Professional Charities, has ever been more disinterestedly, faithfully and efficiently executed.

The subject of artificial limbs has always been an interesting one, in the study of mechanical surgery, and during the past five years, it has been the appropriate and appreciated object of intelligent and scientific labours. It does not appear, however, in the history of this subject, that it has ever received more full and reliable consideration, than has been recently accorded to it, nor have the names of those thus engaged, previously, been more familiar, to the general and Professional Public, as the representatives of gentlemen fully qualified, for discharging this laborious and important duty.

The Report of the Commission will be found in another portion of this Journal and having been already published in the Richmond Times, it has been extensively read and uniformly commended.

It will be observed that in the preparation of this Report, there are conspicuously evinced that happy soundness of judgment, lucidness of exposition and comprehensive analysis of important general principles, that justly secure, for the work, the confidence, as well as the commendation of the Public.

It had been far easier to furnish an elaborate dissertation upon the anatomical, physiological and mechanical problems involved; to quote, learnedly, familiar and easily accessible passages from Sharpey and Dalton and Davies; to cite illustrations, refreshing, perhaps, to the wise, and confounding, certainly, to the simple, but, as has been well said, "*this would only have wearied attention, without subserving, in any degree, the interests of those, for whose special benefit the Commission was organized.*" Though the work of scientific gentlemen, it is particularly designed for the guidance of those who need such assistance, and who would have turned, hopelessly, from elaborate problems in philosophy and learned expositions of abstruse principles.

The truths enunciated are derived from a patient and protracted analysis of all relative principles involved, and while the general Public are assured of this assumed and accepted fact, they are not, for the attainment of a similar result, expected to undergo a similar and arduous labour.

These axiomatic considerations are evident, throughout the spirit and text of the report, and undoubtedly are specially commended by those, for whose benefit, the members of the Commission have discharged this charitable duty.

It will be observed, that the Commission has not adjourned permanently, but that, through its Committee, it is now engaged in obtaining the names and numbers of all in Virginia who lost limbs during the late war; it being the intention of the Commission to present, to the Legislature of the State, these facts, with all others important and necessary.

By this course, all who are unable to procure limbs will be supplied one year earlier, than would be otherwise practicable. The plan adopted by the Commission, in their present labours, is commended to the members of the Profession, in other States, for adoption, in order that all physically disabled, in those States, may

receive a similar benefit, through the philanthropic aid of Physicians therein resident. There are Physicians in every State who will certainly undertake this labour with cheerfulness and efficiency, and it is hoped, that the suggestion now made will be promptly adopted and successfully elaborated.

In this utilitarian age, the smile of derision and skepticism, in regard to the great Charities of the Medical Profession, is fashionable and familiar, still, that these Charities exist, and yearly increase, is manifest and demonstrable.

Special eulogy has been justly and universally bestowed upon the Samaritan, who gave his labour and his means, in behalf of the stricken traveller, *found by the wayside*; had this historic philanthropist *gone out of his way* to seek the invalid and the maimed, apotheosis would, perhaps, have taken the place of eulogy, yet, modern instances of such sacrifices are common and familiar. The labors of this Commission furnish the convenient and acceptable opportunity of protesting against the growing tendency to depreciate the great Charities of modern Physicians, and of showing that the commendable example of the Samaritan is, not only daily illustrated, but, that it is always remembered, and, not infrequently, surpassed.

It has been noticed, that "Exchanges," while freely republishing articles from this Journal, fail to give the work that credit which is usual and which should be universal. While other Journals have been credited for all contributions selected from them, there has been an objectionable omission to do justice to this work. It is always a source of gratification to find any matter that has appeared in this Journal republished, and this gratification would certainly not be diminished, if the source of selection were always justly indicated.

The number of advertisements in a Journal do not, as some singularly suppose, diminish the amount of text that would otherwise be published.

If advertisements are carefully read, it is believed that they may

be of material benefit to the supporters of a Journal, and as they serve to defray, in a great measure, the expenses of publication, the liberality of Journal management is in a direct ratio, with their number, duration and size. Subscribers should, therefore, consider, that a large advertising support of a Journal is a source of direct and immediate advantage to themselves.

The number of advertisements sent to this Journal has conspicuously increased since January last, and instead, therefore, of completing this number, the first semi-annual volume of the Journal, with 480 pages, as stipulated, 589 pages have already been published; being a gratuity, in six months, of more than an entire month's issue, on the part of the Publishers. If each supporter of this Journal will send but one additional subscriber, the *Proprietors of the work pledge themselves* to an increased liberality in its management.

All of the type and material of this office have been furnished by the house of H. L. Pelouze & Co., of Richmond, Va. The cost of the whole has not been above that asked elsewhere, and the terms have been as liberal and satisfactory, as the execution of the work has been prompt and unexceptionable.

NOTICES.

 This Journal is published as a Monthly octavo of eighty pages.

A respectable number of the best writers in this country have promised their support, (an ostentatious display of names is avoided,) and as the Editors offer to pay, at the **HIGHEST JOURNAL RATES**, for **ARTICLES, ESSAYS, CORRESPONDENCE and REVIEWS OF RECENT WORKS**, it is hoped that the original department of the JOURNAL will be entitled to respect and confidence.

The pages of the JOURNAL are devoted to Original Articles, a Retrospect of Medicine and Surgery during the late war, an Eclectic Department, (which is a chief feature of the JOURNAL,) Reports of Societies, Associations, Hospitals and Clinical Lectures,

Foreign and Domestic Correspondence, Reviews and Bibliographical Notices, Medical News, Editorials, Miscellaneous Matter, etc.

Without making special promises, the Editors will endeavour to make this Journal acceptable to its supporters.

TERMS — FIVE DOLLARS yearly, if paid in advance, or before the expiration of the third month after the date of subscription; if paid after this period, TEN DOLLARS per annum.

*ADVERTISING RATES.

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Ten per cent. additional for insertions in the front advertising forms of the Journal. Outside Cover Page, \$200; Inside Cover Page, \$150, each, yearly.

ACCORDING TO THE PUBLISHED TERMS of this Journal, all subscriptions will be doubled, if unpaid three months after the date of the original subscription order. Subscribers, know, each, the date of the order given, and will govern themselves accordingly. It is hoped that the Publishers will not be compelled to enforce these terms, in regard to any one.

MONOGRAPHS, Pamphlets, Circulars, Reports of Institutions, etc., will be printed with neatness and dispatch, and at the lowest rates, at THE RICHMOND MEDICAL JOURNAL OFFICE.

ADOPTING THE POLICY of the London Lancet, and other European periodicals, the Advertisements in this JOURNAL, will constitute both a prefix and appendix to the Work.

Many subscribers have remitted the amount due for the postage of this Journal. In all cases, this sum has been returned. The postage is to be paid at the office of delivery.

NOTICES TO SUBSCRIBERS, ADVERTISERS, CONTRIBUTORS AND CORRESPONDENTS.

Those once ordering the Journal will each year be considered as subscribers, and the terms of this Journal adopted in regard to them. An order for discontinuing the Journal should be sent at least two months in advance. As is usual, no subscription or advertisement will be discontinued until arrears are paid.

The Publishers assume the risks in regard to all amounts sent by mail, if the packages or letters are registered. When practicable, all sums to be so sent should be deposited with the Postmaster, and the "money order," obtained from him, transmitted.

Receipts for all amounts transmitted, will be sent in the Journal, for the succeeding month.

It is desired to obtain for this Journal one Agent in every City and Town.

To each Agent there will be allowed twenty per cent. of the amount due for each subscription or advertisement.

All communications sent by mail should be directed to Dr. E. S. Galliard, Locked-Box 32, Richmond, Va. Those to be delivered personally, should be left at his office, corner Franklin and Fourth Streets.

European packages, sent through Trubner & Co., 60 Paternoster Row, London, or J. B. Balliere et Fils, Rue Hauteferuille, Paris, will be safely forwarded.

It is expected that all expenses will be paid on packages, foreign and domestic, sent to this Journal.

All contributions or papers, intended for insertion in the next Number of the Journal, should be received by the middle of the month preceding.

Contributions for publication must bear the signature of the writer, and must be communicated to this Journal exclusively.

Original articles should be written on one side only of each sheet, and the manuscript should be, by the sign (¶), divided into paragraphs.

Contributors can have forwarded to them, at a small expense, one hundred or more copies of their articles, in pamphlet form, provided the order to this effect be received before the period of publication.

The Journal will be sent a second time, when not received one month after the usual period of its appearance.

Rejected manuscript will be returned, if desired, by mail or Express, at the expense of the writer.

Each subscriber will give at length his name, State, County and Post Office.

MORTUARY.

FERGUSON, JAMES, M. D. New York, May 22, 1866.

OBITUARY.

Dr. EDMUND N. BEAZLEY died in Crawfordville, Georgia, on the 22d of August, 1865. Dr. Beazley was born in Spotsylvania county, Va., on the 25th of August, 1825. In early life, he settled in Georgia, and his Professional services have been mainly given to the Town and County in which he died.

Endowed with intellect of a superior order; kind, cheerful and sympathetic in his nature; uniformly pleasing in his manner; and untiring in the duties appertaining to his Profession, it was not strange that his presence was so welcome in the sick room. There it was that his usefulness was known and acknowledged; and there it

was that the whole man seemed changed, and he, who, a few moments before, had been the life and spirit of the social gathering, now became the earnest, serious and untiring minister of hope and comfort—every act marked by quiet dignity, every look beaming with benevolence, every word gentle and kind. Though it was in this equality that his virtues shone pre-eminent; yet, such was his open, generous nature, that it was common to hear of him, that “no one could dislike him.” His disregard for self amounted to improvidence. He lived and toiled for others. In a better world may he reap his reward.

A FRIEND.

THE LATE PROF. JOSEPH MATTHEW SMITH, M. D., was born at New Rochelle, Westchester County, New York, March 14, 1789, and was the son of the eminent Dr. Watson Smith.

He graduated at the College of Physicians and Surgeons, New York, in 1815, and in 1826 was appointed Professor in his Alma Mater, a position he has most ably filled to the time of his death. For nearly forty years he has been one of the Physicians of the New York Hospital, and during that long period, he has skillfully and kindly attended the patients, there gathered. He drew thither, prior to the removal of the Colleges up town, crowds of students to listen to his clinical instructions. In 1864, he was elected President of the New York Academy of Medicine. The American Medical Association owes much of its distinction to the energy of Dr. Smith, some of the most elaborate and learned papers in its published transactions being the fruit of his pen.

The Council of Hygiene, of the Citizens' Association of New York, made him their President at their organization, and it is chiefly due to the efforts of that body that we have, at length, an efficient Board of Health. His practice has been mainly one of consultation, his character and learning winning for him the love and confidence of his Professional brethren, who eagerly sought his counsel.

The offices of distinction he has filled, and his numerous writings, will shed lustre on his name; these will, doubtless, soon be memorialized by his Professional brethren. His original work, published in 1824, on the *Elements of the Etiology and Pathology of Epidemics*, quoted as authority to the present day, at home and abroad, will be an enduring monument to his memory.

Dr. Smith was cherished by his friends and relations, not only for his skill as a Physician and scholarly acquirements, but for his courteous manners, genial temper, and Christian virtues. It has been well said of him, that, with all these several characteristics, “his attainments were not more remarkable than his modesty and retiring demeanor.”

BOOKS, JOURNALS, Etc., RECEIVED.

Register of the Officers and Cadets of the Virginia Military Institute. 1866. Richmond Whig. From the Faculty.

The Farmer. Devoted to Agriculture, Horticulture, the Mechanic Arts and Household Economy. June. Elliott & Shields. From the Publishers.

Local Anæsthesia by Cold. By Calvin G. Page, M. D. From the Author.

Seventeenth Annual Announcement of the Female Medical College of Pennsylvania. 1866-67.

The Sinai Bible. By Howard Townsend, M. D. Albany, New York. From the Author.

Food and its Digestion. By Howard Townsend, M. D. Albany, N. Y. From the Author.

Cholera: Facts and Conclusions as to its Nature, Prevention and Treatment. By Henry Harte-horne, A. M., M. D. Philadelphia. J. B. Lippincott & Co. 1866.

An Introduction to Practical Chemistry, including Analysis. By John E. Bowman, F. C. S. Edited by Charles L. Bloxam. Fourth Edition. London. John Churchill, New Burlington Street. 1861.

Reflex Paralysis: Its Pathological Anatomy, and Relation to the Sympathetic Nervous System. By M. Gonzalez Echeverria, M. D., University of Paris. New York. Bailliere Brothers, 520 Broadway. 1866.

London Punch. May.

Littell's Living Age. May.

Foreign Bodies in the Ear; with a Bibliography and a Condensed Statement of the Present Condition of Aural Surgery. By Laurence Turnbull, M. D., Aural Surgeon to Howard Hospital, Etc., Philadelphia. Philadelphia. Collins, Printer, 706 Jayne Street. 1866.

The Pacific Medical and Surgical Journal. May.

Medical News and Library. May.

London Lancet. May.

Boston Medical and Surgical Journal. May.

Chicago Medical Journal. May.

Philadelphia Medical and Surgical Reporter. May.

St. Louis Medical and Surgical Journal. May.

Canada Medical Journal. May.

American Journal of Pharmacy. May.

Buffalo Medical and Surgical Journal. May.

American Druggist's Circular. May.

Hall's Journal of Health. May.

The New York Journal. May.

Dental Cosmos. May.

The Memphis Medical and Surgical Monthly. May.

The Cincinnati Journal of Medicine. May.

The Galveston Medical Journal. April.

The Atlanta Medical and Surgical Journal. May.

Savannah Journal of Medicine and Surgery. May.

St. Louis Medical Reporter. May.

New York Lancet. May.

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THE RICHMOND MEDICAL JOURNAL

E. S. GAILLARD, M. D., AND W. S. McCHESNEY, M. D.,

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INDOCTI DISCANT ET AMENT MEMINISSE PERITI.

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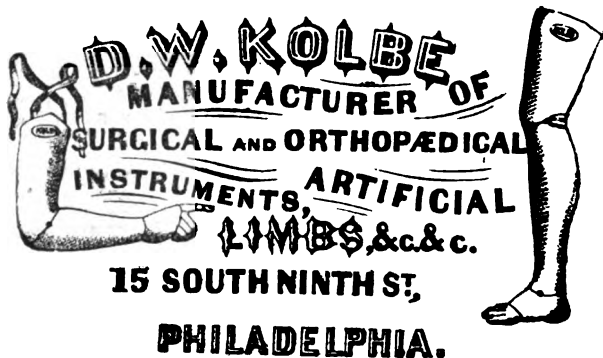
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Particular attention is called to the improved Artificial Legs and Arms; Apparatus for Resection, shortened legs, ununited fracture. Apparatus for the variations of club-foot, bow-legs, knock-knees, weak ankle; Spinal Supporter Apparatus, for disease and injuries of hip-joints, &c.

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PHILADELPHIA, PA.

Opinion of Military Men Concerning THE PALMER LEG AND ARM.

BREVOORT HOUSE, NEW YORK, January 12, 1865

SIR,—I have great pleasure in bearing testimony to the excellence of the Artificial Leg you made for me. I have used it long enough to convince me of the superior mechanical construction of the limbs you make.

My intercourse with yourself has impressed me with your unwearied devotion to your patients, and the rare scientific accomplishments you bring to their relief.

In placing this note at your disposal, I only perform a duty to my comrades who may, by the fortune of war, have occasion for your services.

I remain, dear sir, very respectfully,

D. E. SICKLES, Major-General.

B. FRANK PALMER, LL. D., Philadelphia.

Boston, Mass., January 6, 1865.

DEAR SIR,—I have now used the Palmer Leg (full length) for more than two years. During most of that time, I have been on active duty in the field. It has stood the severe test of campaigning, exposure to all weathers, and constant use in the saddle, *admirably*. I have never been kept off duty an hour by any fault in its mechanism. I willingly bear testimony to its superior merits, and express my complete satisfaction with the result of the test to which I have subjected it.

I am, sir, very respectfully,

W. F. BARTLETT, Major-General.

B. FRANK PALMER, LL. D.

WASHINGTON, December 27, 1864.

DEAR SIR,—Having worn one of your Patent Legs, I desire to add my testimony in favor of an invention so beneficial to humanity. I suffered amputation of my right leg, six inches below the knee, on April 30, 1864. Five months later, I began

to wear my false leg. The socket was comfortably fitted, and I have no trouble with the leg whatever. I cannot express, in language, my admiration and gratitude for an invention which reconciles me to the loss of a limb, and which enables me to enjoy so much comfort and happiness. It makes that which formerly appeared as one of the severest afflictions, to be, in reality, one of the least. My Patent Leg has been perfectly satisfactory in every way, and I do not see what fault can be found, or what improvement can be made. Should you desire any other testimony from me, I shall always be happy to give it.

I am, very respectfully, your obedient servant,

FRANCIS FESSENDEN, Major-General.

B. FRANK PALMER, LL. D.

PENDLETON, ANDERSON Co., S. C., April 24, 1866.

DEAR SIR,—I am happy to inform you that the trial I have now given your Patent Leg, leaves me no reason to doubt that it deserves all that has been said in its praise. I am convinced, from actual trial of it, and from the testimony of many who have worn it for years, that it is the *best Patent Leg in the world*, and I shall be glad to learn that my mutilated friends in the South are so fortunate as to select this incomparable substitute. My limb was amputated within two inches of the knee, in consequence of a wound received in battle in front of Richmond. On the *first trial of the PALMER leg, I was able to walk without a cane, and with the utmost comfort and facility*. I shall avail myself of an early opportunity to show the limb to Governor ORR, from whom I had the honor to receive an introduction to you, and I am sure the Governor will gladly recognize the great superiority of your beneficent invention, and send others to you for relief.

Very truly, your obedient servant,

RICHARD LEWIS,

Captain Co. B, Palmetto, S. C., Sharpshooters.

DR. B. FRANK PALMER.

RALEIGH, N. C., April 4, 1866.

DEAR SIR,—It affords me much pleasure to acknowledge the great success of your Professional treatment in my case, which is one of the most difficult kind to treat, my foot being amputated by the Chopart method. The mechanism is complete in all respects—light, comfortable and strong—and *I walk perfectly*. I am convinced, after careful examination of a great number of patents, that the PALMER limbs are superior to all others, and strongly recommend the adoption of them by my mutilated comrades of the South, feeling assured that no other manufacturer can produce a limb so perfect.

Very respectfully,

J. G. MORRISON,

A. D. C. to the late Gen. T. J. Jackson.

DR. B. FRANK PALMER.

CLEVELAND, KING GEORGE Co., Va., May 10, 1866.

MY DEAR SIR,—It gives me pleasure, after having worn your Leg for over twelve years, to state to you the entire satisfaction which it has given me. I lost my right leg, above the knee, in 1853. I was then twelve years old. I procured one of your Legs, and in the course of ten months, *threw aside my cane, which I have never used since*. I hunted, frequently, on foot, for hours together, and, in cool weather, have

walked from breakfast until dinner with little inconvenience. I soon learned to ride well on horseback, and could mount by the stirrup or vault into my saddle from the ground. When the war commenced, I enlisted as a private in a Cavalry Company, and did, I believe, good service, until I was made a staff officer on the staff of Brigadier-General Field, U. S. A.

I served through the entire war, and, with the exception of a few months, when my commanding officer was on sick furlough, I was on duty in the field. I do not think I lost a day on account of my leg during the war. I surrendered with my Division at Appomattox Court-House. At the close of the war, the machinery of the leg was still good, although it had been subjected to the severest tests by exposure, etc.

During twelve years' experience, I have found your limb to possess every requisite of a perfect artificial limb—lightness, durability, simplicity, comfort and naturalness.

Having had opportunities to examine almost every Leg made in the United States, I believe that your limb is superior, in every respect, to any now made.

It gives me pleasure to testify to its merits

Truly your friend,

JULIEN J. MASON,

Late Major and Chief U. S. Field's Division, Longstreet's Corps, A. N. V.

Dr. B. FRANK PALMER, 1609 Chestnut St., Philadelphia.

CERTIFICATE OF COL. W. S. KING.

Col. King was, for several years, Medical Director of the great Central Department of Pennsylvania, and established the only large Army Hospital which was devoted exclusively to the treatment of the Mutilated. His opportunities of judging of the merits of the various Patent Limbs were unequaled.

OFFICE OF SUPERINTENDENT U. S. A. HOSPITALS, }
CINCINNATI, OHIO, March 15, 1866. }

Having acted as Medical Director during three years of the war, it became my duty to give orders for artificial limbs to mutilated soldiers, and as Dr. B. F. PALMER'S *Limbs were generally preferred, a large majority of the orders were given on him to furnish the necessary limbs.* So far as my knowledge extends, the limbs furnished by Dr. Palmer have given most satisfaction, and this also is the *testimony of hospital stewards and non-commissioned officers* on duty at the various hospitals in my charge, who have had opportunities of seeing the men after they had received and used the limbs furnished to them; and, I have, therefore, no hesitation in saying that, *in my opinion, they are preferable to all others.*

W. S. KING,

Brevet Colonel and Surgeon U. S. A.

Among the prominent Generals, who have purchased the PALMER ARM, may be named Major-Generals O. O. Howard, [amputated near the shoulder,] and George W. Macy, [amputated below the elbow,] also, Brigadier-General Wilde, [amputated

at the shoulder-joint,] who has the Palmer ARMOUR for such an amputation, and General Yorke, of Mississippi, to whom reference is respectfully made, and to the following gentlemen :

BUREAU OF REFUGEES, FREEDMEN AND ABANDONED LANDS,
Office Chief Q. M. & Financial Agent, State of Virginia,
Richmond, Va., May 2, 1866. }

DEAR SIR,—It gives me great pleasure to add my endorsement to the very many testimonials you have received from persons who have worn your artificial limbs. I have worn one of your Patent Arms constantly since April, 1862, most of the time in active service, where it was exposed to all kinds of weather, and have found it of very great assistance to me in many ways, and should I be deprived of it, I would miss it nearly as much as I did my own.

I remain, very truly yours,

GEORGE Q. WHITE,
Captain Chief Q. M. & F. A.

Dr. B. FRANK PALMER, Philadelphia, Penn.

AMPUTATION WITHIN TWO INCHES OF THE SHOULDER-JOINT.

CHARLESTON, SOUTH CAROLINA, February 24, 1866

DEAR SIR,—When about to leave your City in December last, you desired me to communicate the degree of success I should attain in the use of your "Artificial Arm." I now do so with pleasure, because the benefit I enjoy from its use, places me under obligation to the author of so great a boon to man. I am free, therefore, to say, in all candor, that your Arm and Hand is a decided success, and affords me conveniences and comforts quite beyond my most sanguine expectations. I was a staff officer in the late Confederate States army; was wounded in the left arm on 3d April, 1865, and suffered its amputation on May 8th following. My stump is only two and a half inches long. Your Arm was attached December 22d, since which time I have worn it every day, and frequently at night while asleep, without the slightest inconvenience or annoyance. Your Hand I believe to be superior, in its general usefulness, to any which I have yet seen or heard of. With its aid I manage easily a round rule in keeping a set of books, and the ordinary silver fork at table, with considerable profit. It serves to keep my paper in position while writing and grasps a watch with sufficient firmness when winding it up. It is easily gloved and ungloved. In fine, I enjoy many uses from it which, to the untutored, would seem impossible. You are at entire liberty to use this letter in such manner, to advance your interest, as you desire.

With much personal good will,

I remain, truly yours,

ARTHUR PARKER, Captain, &c., &c.

Dr. B. FRANK PALMER, No. 1609 Chestnut St., Philadelphia.

June, 1866—f

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Health and Strength
USE
CAPEWELL & CO.'S
PATENT
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These wheels are designed for Pianos, Bedsteads, &c. We claim that they give to Pianos, a greatly increased force of sound, without detracting from the harmony and melody of the instrument, rendering every note more distinct to the ear. This is so apparent, that they are now being applied, by many, to the valuable musical instruments. Dr. Valentine Mott, previous to his death, pronounced the Glass Castor Wheels an invaluable invention for bed-fast invalids, who are guarded against the damp floors, after undergoing the process of cleansing, or where dampness is produced from any other cause. Aside from this, House-keepers are relieved from the dread of having their carpets cut or torn, as frequently happens from those now in use, often caused by a rust, which adheres with glue like tenacity. No such annoyance can possibly proceed from the Glass Castor Wheels, as we all know that glass is non-corrosive. There are no rough or unfinished edges to the Glass Wheels, such as we often find in those of iron, and the latter, though smoothly finished, will soon rust, from the dampness of the atmosphere, if nothing else, producing roughness on the surface or edge, while the former will always maintain the smoothness of glass, just as they are finished.

By sleeping upon glass wheels, you retain all the electricity you had in your body on retiring, and you get up in the morning feeling as fresh and active as a young man. Glass being a non-conductor, the electricity gained while in bed cannot pass off. Ask your doctor what he thinks of the Glass Castor Wheels. Ask him if all diseases, with the exception of chronic diseases, are not caused from the want of electricity. We have a man in our place, who the doctors pronounced past curing, with the inflammatory rheumatism. The wheels cured him in less than four weeks. He is, to-day, a stout, healthy man. These are facts which can be proven, on application at our office, No. 203, Race Street, Philadelphia, or at our Factory, at Westville, New Jersey, where we have some sixty hands employed in the manufacture of the Glass Castor Wheels.

\$100 will be paid to any one, who will say they have not received any benefit or relief, after using Capewell & Co.'s Patent Glass Castor Wheels for Bedsteads, &c.

\$100 extra will be paid to any one, who can prove that Capewell & Co.'s Glass Castor Wheels are not beneficial to the health.

\$100 more will be paid to any one, who can say that Capewell & Co.'s Glass Castor Wheels will cut, or otherwise injure your Carpets.

\$1 000 to any one, who will prove that Capewell & Co.'s Glass Castor Wheels for Bedsteads or Pianos are not non-corrosive to Carpets, &c.

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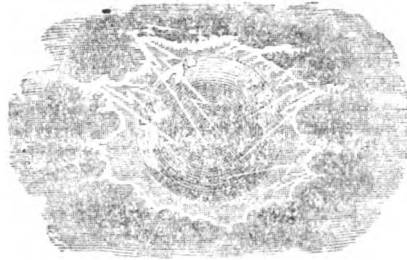
If you want to enjoy a good night's rest, use Capewell & Co.'s Glass Castor Wheels for Bedsteads, &c.

 Call and see them at our office.

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J. B. CAPEWELL & CO., Patentees,
Flint Glass Manufacturers, Westville, N. J.

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Electro-Medical Apparatus.

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And the BEST OFFICE, and also the

BEST POCKET ELECTRO-MEDICAL APPARATUS.

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Their simple mode of construction and usefulness unquestionable, and *val* and graceful motions, not here of crazy, complicated machinery Artificial Limbs. They are not only compelled to use artificial substitutes, geons of the country, as may be seen names of the above judges, as a thus spoken :



makes their unparalleled durability gives to the wearer still *elastic, natu*, tofore attained, and without that mass usually used in the construction of favorites with the unfortunates who are but are recommended by the first sur- by the following letter, as well as the few among the many who have

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March 21, 1866. }

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LEWIS A. SAYRE, M. D., Professor of Surgery,
Bellevue Hospital Medical College.

N. B.—These limbs are furnished to United States soldiers FREE by Government authority. Illustrated Pamphlets sent FREE.

my 1866—6m

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DR. CHAPMAN'S PATENT SPINE BAG,
FOR THE DRY APPLICATION OF COLD AND HEAT ALONG THE SPINE.

Its uses in the Functional Diseases of Women, Epilepsy, Infantile Convulsions, Cholera, Paralysis, Diabetes, and also for the Prevention and Cure of Sea Sickness, are already well established by the experience of eminent Practitioners.

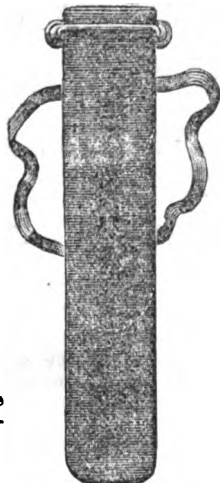
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 “ **DAVID H. TUCKER,** “ “
Hon. RICHARD VAUX, Philadelphia.
SAMUEL J. RANDALL, M. C., Pennsylvania.
THOMAS B. FLORAN, Washington, D. C.

my 1866—1y

E. SPELLERBERG,

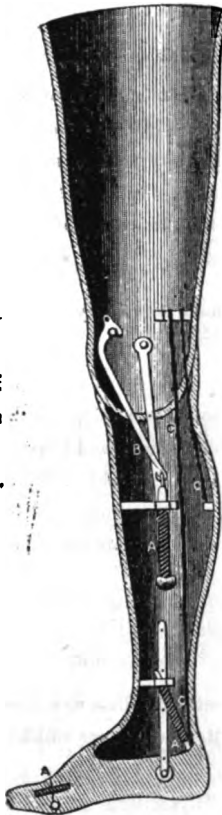
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Calls the attention of the Public to his Improved Artificial Leg, which is constructed differently from all others now in use, and not surpassed for its life-like elasticity, lightness, adaptability, and perfection of external appearance.



The Artificial Hand and Arm invented and manufactured by him, is far superior to any other yet invented, and combines all the advantages of a beautiful and dressy substitute



for a natural limb, as well as those of a stump arm, to which can be fitted any number and shape of tools which the wearer may find necessary to use in his daily occupation, thus rendering it to be not only a showy, but a very useful substitute for a natural limb.

The mechanism of the Hand and Arm being entirely of steel, has the great advantage of not being subject to atmospheric changes, which is a matter of constant complaint amongst the wearers of Artificial Arms, in which the mechanism is made of catgut and similar substances. The Hand can be separated from the Arm at the wrist, by simply pressing on a knob, and removing it without deranging the mechanism, and any tool can be substituted for it.

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He also calls attention to his Orthopædical Instruments, such as Apparatus for Club Feet; Weak or Sprained Ankles, Bow Legs, Knock Knees, Paralysis, Curvature of the Spine, &c., &c., in the manufacture of which he has had an experience of ten years. Trusses, Crutches, Shoulder

Braces, Abdominal Supporters, Elastic Stockings for various veins, &c., &c., constantly on hand and made to order.

 All orders by mail promptly filled, and Directions for Measurement sent to any address.

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It is the desire of the Superintendent of Clifton Hall, to make it in every respect

A HOME FOR HIS GUESTS.

The location is beautiful and salubrious. The house, though possessing all the safeguards and appliances of a public hospital, in external appearance and internal arrangements, presents nothing to unfavorably impress its inmates. The family of the Superintendent, and patients of both sexes, take their meals at a common table, differing in no respect from the tables of the educated classes in private life. The Attendants are intelligent, respectful and attentive.

REFERENCES:

SAMUEL HENRY DICKSON, M. D., formerly of Charleston, South Carolina, now Professor of Theory and Practice of Medicine in the Jefferson Medical College of Philadelphia.

JOHN C. MERCER, M. D., Williamsburg, Va.

R. A. GIVEN, M. D., Clifton Hall,

Kelleyville, Delaware County, Pennsylvania.

my 1668—1y

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Cerates,

Confections,

Soda and Mineral Water Syrups; Pure Fruit Juices, hermetically
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Disinfectant,

Phénol Sodique.

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with its wonderful remedial and curative properties, are extensively
using it in their practice, and daily discovering new uses for it.

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rations by the principal Wholesale Houses in the United States.
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Medicated Wines,

Medicated Syrups.

Tinctures,

Ointments,

Seidlitz Powders,

Soda Powders,

Podophyllin,

Fruit Essences,
&c., &c.

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J O N E S & W H I T E ,
M A N U F A C T U R E R O F
P O R C E L A I N T E E T H
A N D
D E N T I S T S ' M A T E R I A L S ,

G O L D A N D T I N F O I L S , D E N T A L I N S T R U M E N T S ,
G o l d a n d S i l v e r P l a t e ,
O P E R A T I N G C H A I R S , C O R U N D U M W H E E L S ,
L a t h e s , F u r n a c e s , R o l l i n g - M i l l s , B l o w P i p e s ,
A n d a l l o t h e r a r t i c l e s u s e d b y t h e P r o f e s s i o n .

P L A T I N A P L A T E A N D W I R E ,

I n a l l f o r m s , a n d i m p o r t e d t o o r d e r f o r s p e c i a l u s e s .

C A T A L O G U E S S E N T O N A P P L I C A T I O N .

A l s o , P u b l i s h e r o f t h e

D e n t a l C o s m o s ,

A M o n t h l y r e c o r d o f D e n t a l S c i e n c e , d e v o t e d t o t h e i n t e r e s t s o f
t h e P r o f e s s i o n . E d i t e d b y J . H . M c Q U I L L E N , D . D . S . , a n d G E O R G E
J . Z I E G L E R , M . D . , P r i c e \$ 2 . 5 0 a y e a r , i n a d v a n c e ; s i n g l e c o p i e s
2 5 c e n t s .

M A N U F A C T O R Y A N D P R I N C I P A L D E P O T .
5 2 8 A R C H S T R E E T , P H I L A D E L P H I A .

B R A N C H E S :

6 5 8 B R O A D W A Y , N E W Y O R K ,

1 6 T R E M O N T R O W , B O S T O N .

1 0 0 & 1 0 2 R A N D O L P H S T R E E T , C H I C A G O .

m y 1 8 6 6 — 1 y .

WM. R. WARNER & CO.,

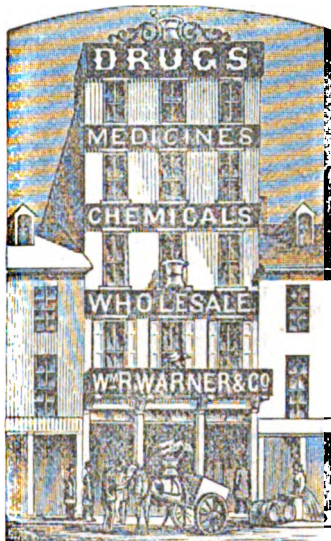
IMPORTERS, FACTORS AND JOBBERS

OF
DRUGS, CHEMICALS AND PHARMACEUTICAL PREPARATIONS,
No. 154 North Third Street, Philadelphia.

PRICE LIST OF

SUGAR-COATED PILLS & GRANULES.

Our Sugar-Coated Pills embrace the official list and many others of great merit, by eminent Physicians. The various Pills are prepared, with the greatest care, from materials of the best quality, and you may be assured of their reliability. W. R. Warner, at his Laboratory in Kensington, has been largely engaged in the preparation of Sugar-Coated Pills (sold extensively by a leading firm in this city), as a speciality, for the last nine years, and secured for them a deserved popularity



by devoting great personal labour, attention, and study to perfect the manipulation and to render them permanent in any climate. The facilities afforded by our present place of business, and with new and ample appliances enables us to present this matter favorably to your notice, and to solicit directly your patronage.

Special Recipes or private formulae made to order for 3,000, or more, Pills or Granules. Complete lists, with formulae appended, furnished on application.

Orders from Country Physicians PROMPTLY FILLED with articles of the best quality at reasonable rates.

	Price per 100	Price per 500
PIL. Aloes, U. S. P.	\$0 35	\$1 50
Comp: U. S. P. (Pil: Gent: Comp:)	40	1 75
Aloes et Assafet: U S P.	40	1 75
Aloes et Mastich: U S P.		
(See Pil: Stomachicae)	50	2 25
Aloes et Myrrha, U S P	45	2 00
Antimo: Comp: U S P (Pil: Plum:)	40	1 75
Assafetida, U S P	40	1 75
Cathart: Comp: U S P	75	3 50
Colocynthis Comp: 3 gr		
Ext: Coloc: Comp: U S P	80	3 75
Copaiba, U S P, 3 gr	50	2 20
Ferri Carb: (Valer: s) U S P 3 gr	40	1 75
Ferri Comp: U S P	40	1 75
Galbani Comp: U S P	50	2 25
Hydrargyri, U S P 3 gr	40	1 75
Ipecac et Opii, 3 1/2 gr		
Pulv: Doveri, U S P	50	2 25
Opii, U S P 1 gr	75	3 50
Rhei, U S P	75	3 50
Rhei Comp: U S P	75	3 50
Scilla Comp: U S P	50	2 25
Aloes et Ferri,	40	1 75
Ammon: Bromid: 1 gr	75	3 50
Anderson's Scots	40	1 75
Anti-Bilious, Vegetable,	75	2 50
Anti-Chill	1 50	7 00
Anthelmintic	1 00	4 75
Aperient	90	4 25
Assafetida, 2 gr	40	1 75
" Comp:	40	1 75
" et Rhei	75	3 50
Bismuth: Subnit: 3 gr	75	3 50

PILLS.

	Price per 100	Price per 500
PIL: Gambogia Comp:	40	\$1 75
Gent: Comp:	40	1 7
Gonorrhœa	60	2 75
Hepatica	90	4 25
Hooper, Female Pills, 2 1/2 gr	40	1 75
Hydrargyri, 5 gr	50	2 25
" Comp:	80	3 75
" Iod. et Opii, Ricord's,	75	3 50
Iodoform et Ferri	3 50	17 25
Ipecac: et Opii, 5 gr	60	2 75
Leptand: Comp:	1 00	4 75
Lupulin, 3 gr	40	1 75
Magnesie et Rhei, 1 gr each	40	1 75
Opii et Camphore	90	4 25
Opii et Camphore et Tannin	90	4 25
Opii et Plumbi Acet:	80	3 75
Potaphyllin et Hydrarg:	50	2 25
" Bromid: 1 gr	75	3 50
Potass: Iodid: 2 gr	85	4 00
Quinine Sulph: 1/2 gr	90	4 25
" 1 gr	1 60	7 50
" 2 gr	3 10	15 25
" 3 gr	4 60	22 50
Quinine Comp:	1 90	9 25
Quinine et Ext. Belladon:	1 90	9 25
Quinine et Ferri	1 90	9 25
Quinine et Ferri et Strychnine	1 90	9 25
Quinine et Ferri et Valer: 2 gr	3 50	17 00
Santonin, 1 gr	1 00	4 75
Stomachicae,		
Lady Webster's Dinner Pills, 3 gr	40	2 25
Zinc: Valerian: 1 gr	1 00	4 75

WARNER & CO'S DRUGS, &c.—Continued from preceding Pa c.

PILS: Blamuth: Sulcarb: 3 gr		75	3 50	SUGAR-COATED GRANULES.	
Calomel: $\frac{1}{2}$ gr		40	1 75	Accurate methods and the greatest care are employed in dividing these minute doses, to render them uniform and accurate.	
" 1 gr		40	1 75		
" 2 gr		40	1 75		
" 3 gr		40	1 75		
" 6 gr		50	2 25		
" et Ophi		85	4 00	Acid. Arsenious, 1-20 gr	\$0 40 1 75
" et Sbei		75	3 50	" " 1-50 gr	40 1 75
Chapman's Dinner Pills		60	2 75	Aconitia, 1-60 gr	75 3 50
Corii Oxalat: 1 gr	1 00	4 75		Atropia, 1-60 gr	75 3 50
Chinoidin: Comp:	1 00	4 75		Corrosive Sublimate, 1-12 gr	40 1 75
Cinchon: Sulph: $1\frac{1}{2}$ gr	75	3 50		" " 1-20 gr	40 1 75
Cock's, 3 gr	50	2 25		Digitalin, 1-60	75 3 50
Copaiba et Ext. Cubeba	80	3 75		Elaterium, Clutterbuck's, 1-10 gr	95 4 50
Diuretic	50	2 25		Extract Belladonna, English, $\frac{1}{2}$ gr	40 1 75
Emucageue,	1 50	7 00		" Cannabis Indica, $\frac{1}{2}$ gr	60 2 75
Fel: Bovinum	50	2 25		" Hyoscyamus, English, 1-2 gr	40 1 75
Ferri, Quevenne's, 1 gr	50	2 25		" Nux Vomica, 1-2 gr	40 1 75
Ferri, Quevenne's, 2 gr	75	3 50		Mercury Iodide, $\frac{1}{2}$ gr	40 1 75
Ferri Citrat: 2 gr	30	2 25		" " Red, 1-16 gr	40 1 75
Ferri Ferrocyanid: 5 gr	50	2 25		Morphia Acet: $\frac{1}{2}$ gr	85 4 00
Ferri Iodid: 1 gr	65	3 90		" Sulphate, 1-10 gr	70 3 25
Ferri Lactat: 1 gr	50	2 25		" " $\frac{1}{2}$ gr	85 4 00
Ferri Pyrophosph: 1 gr	40	1 75		" " 1-6 gr	1 00 4 75
Ferri Sulph: Exsiccant: 2 gr	40	1 75		" Valerianate, $\frac{1}{2}$ gr	1 00 4 75
Ferri Valer: 1 gr	1 00	4 75		Pedophyllin, $\frac{1}{2}$ gr	40 1 75
Ferri et Quass: et Nuc: Vom:	75	3 50		" " 1-2 gr	50 2 25
Ferri et Quin: Cit: 1 gr	75	3 50		Potass: Permangan: Chryst: $\frac{1}{2}$ gr	50 2 25
" " " 2 gr	1 40	6 75		Quinid: Valerianate, 1-2 gr	2 00 9 75
Ferri et Strychnia	75	3 50		Silver Nitrate, $\frac{1}{2}$ gr	75 3 50
Ferri et Strychnia Cit:	75	3 50		Strychnia 1-20 gr	40 1 75
				" " 1-40 gr	40 1 75
				" " 1-60 gr	40 1 75

 Sent, at list prices, to any address, postage or freight prepaid.
Sold by PURCELL, LADD & CO., Richmond, Va.; McKESSON & ROBBINS, 91
and 93 Fulton Street, New York; W. H. BROWN & BRO., 4th South Liberty
Street, Baltimore, and E. J. HART & CO., 78, 75 and 77 Tehouptoulas Street, New
Orleans. my 1866—1y

PILLS OF IODIDE OF IRON.

U. S. PH.

Containing one grain of the IRON SALT, which is presented as an
unaltered and well protected protiodide. Special attention
being paid to their preparation, they
are claimed equal to any similar
preparation before offered
to the
Medical Profession.

FLUID EXTRACT OF RICINUS COMMUNIS (leaves) recommended to
the Medical Profession as an efficient *Galactagogue*, having been
used with eminent success for several years.

PREPARED BY

HEYDENREICH BROTHERS, Pharmacutists,

169 Atlantic Street, Brooklyn, New York.

AGENT—P. E. DUPUY, 201 Broad Street, between 4th and 5th,
RICHMOND, VIRGINIA,

 Who will furnish Samples on application. feb. 1866—1y



Prepared on the sea-shore from fresh-selected Livers of the Gadus Morrhua. After an analysis of it, Professor Hayes, State Assayer of Massachusetts, says: "It is the best for Foreign or Domestic use."

Prof. Parker, of New York, says: "Have tried almost every other manufacturer's oil, and give HAZARD & CASWELL's the decided preference."

The verdict of every patient is in its favor.

It is expressed at so low a temperature that it is as sweet as fresh cream, and almost odourless, and can be retained on the stomach when other oils cannot be.

Sole manufacturers,

CASWELL, MACK & CO.,

New York, and Newport, R. I.

Iron, Phosphorus, Calisaya.

The three best known Tonics, skillfully and elegantly combined in an amber-coloured cordial, beautifully transparent to the eye, pleasant to the taste and acceptable to the stomach, in Caswell, Mack & Co.'s Ferro-Phosphorated Elixir of Calisaya Bark.

Each pint contains one ounce of Royal Calisaya Bark, and each teaspoonful contains one grain of iron.

Samples furnished free to the Profession.

CASWELL, MACK & CO.

Sole Manufacturers, under Fifth Avenue Hotel,
New York City.

mh 1866—6m

THE MOST PERFECT IRON TONIC. HEGEMAN'S Ferrated Elixir of Bark, OR ELIXIR OF CALISAYA BARK, WITH PYROPHOSPHATE OF IRON.

Prepared by **HEGEMAN & CO., Chemists and Druggists, New York.**

The PYROPHOSPHATE OF IRON was introduced by E. Robiquet, of Paris, in 1858, and received favorable notice from the French Academy; it is a very soluble, nearly tasteless salt, and may be taken by the most delicate stomach; it is easily assimilated and not decomposed in the stomach by food or the gastric juice; it is a prompt, efficient tonic, combining the effects of Phosphorus and Iron, and is not stimulating or irritant.

The FERRATED ELIXIR OF BARK is a pleasant Cordial, possessing the valuable properties of Calisaya Bark, deprived of its tannin and colouring matter, and contains eight grains of the Pyrophosphate of Iron in each fluid ounce; and in all cases, where a mild and efficacious Iron Tonic is desired, will be found a most valuable preparation.

DIRECTIONS.—For an adult, a dessert-spoonful to a table-spoonful may be taken three times a day before meals; children in proportion to their age.

Samples furnished to Physicians on application.

Sold by Druggists.

HEGEMAN & CO.'S GENUINE COD LIVER OIL.

Our Cod Liver Oil is warranted pure, and is prepared from the Fresh Liver, selected with great care. It has stood the test of nearly 20 years' experience, and can be relied on in every particular. We make no claim to any secret mode of concentration or Cold Pressing, but warrant it the Pure Oil. Morrhue of the U. S. P.

Sold by Druggists generally throughout the United States.

HEGEMAN & CO., Chemists & Druggists, N. Y.

Pure VACCINE CORDIAL, selected from healthy country children, warranted reliable.

HEGEMAN & CO.'S CORDIAL ELIXIR CALISAYA BARK.

ALUM and KINO LOZENGES and CHLORATE POTASH LOZENGES.

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BULLOCK & CRENSHAW,

Druggists and Manufacturing Chemists,

N. E. CORNER SIXTH AND ARCH STREETS, PHILADELPHIA.

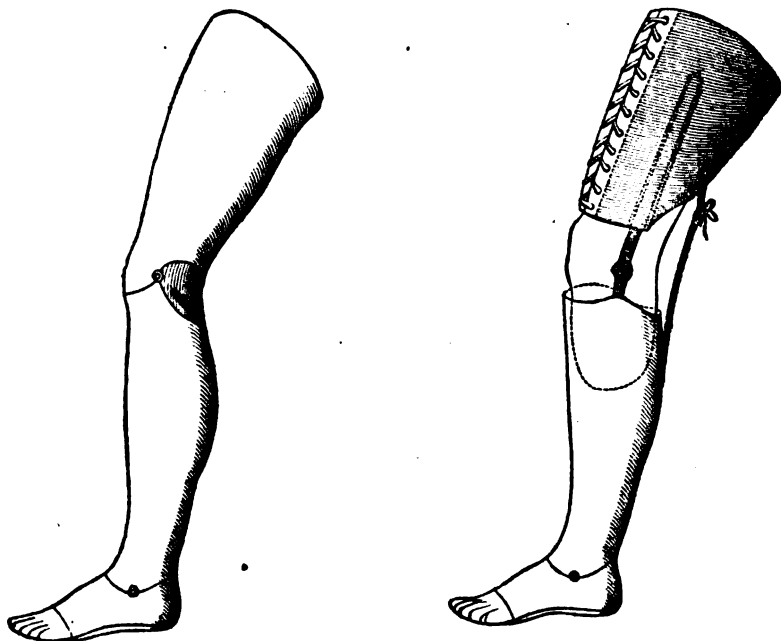
SUGAR-COATED PILLS AND GRANULES.

These Pills and Granules are accurately compounded of the best materials, and can be confidently relied upon.

PILLS.		Per bot. 500
	containing 100 each. each.	
Aloes, U. S. P. { Pulv. Aloes Socot. 2 grs. } " Comp. U. S. P. { Saponis, 2 grs. } Aloes et Assafet. U. S. P. { Pulv. Aloes Socot. 1 gr. } " Zingib. Jam. 1 gr. } Aloes et Ferri, { Ferri Sulph. Exsic. 1 gr. } " { Ext. Confl. 1 gr. }	\$0 40 \$1 75 50 2 25 40 1 75	
Aloes et Mastich. (See Pil. Stomachicæ). Aloes et Myrrhæ, U. S. P. Anderson's Seels. Anti-bilious (Veg.) { Pulv. Ext. Coloc. C. 2½ grs. } " Podophyllin, ¼ gr. } Antimoni Comp. U. S. P. (See Pil. Cal. Comp.) " Hyoscini ½ gr. } " Coloc. C. 2 gr. }	50 2 25 50 2 25 40 1 75 75 3 50 40 1 75 90 4 25	
Assafetides, U. S. P. " et Rhei. Bismuth. Subnit. 3 gr. " Subcarb. 3 gr. Calomel: ½ gr. " 3 gr. " 5 gr. Comp. (Plum.) { Calomel " { Oxy sh. Antim. 3 grs. } " et Opi. { Calomel 2 grs. } " { Opium, 1 gr. }	40 1 75 40 1 75 75 3 50 75 3 50 40 1 75 40 1 75 50 2 25 40 1 75 85 4 00	
Gent. Comp. { Ext. Gent. ½ gr. } " { Aloe Socot. 1½ gr. } " { Pulv. Rhei, 1-5 gr. } " { Ol. Carni, 2 gr. } " { Pulv. Cubebæ, 2 gr. } " { Bals. Copalb. Solid. 1 gr. } " { Ferri Sulph. Exsic. 1½ gr. } " { Terebinth. Venet. 3 gr. } Gonorrheæ, { Pil. Hydrag. 1 gr. } " { Ext. Hyoscini 1 gr. } Hepatica, { Ext. Coloc. Comp. 1 gr. } " { Ext. Hyoscini 1 gr. } Ilooper (Female Pills) 2½ grs. Hydragry, U. S. P. 3 grs. " 5 grs. " Comp. { Mass. Hydrag. 1 gr. } " { Pulv. Opi. ½ gr. } " { Ipecac. ¼ gr. } " { Ferrum per Hydro. 1 gr. } Iodoform et Ferri, { Iodoform, 1 gr. } " { Ferrum per Hydro. 1 gr. } Ipecac. et Opi. 3½ gr. (Pulv. Doveri, U. S. P.) " Leptandrin, 1 gr. " { Ipecac. ¼ gr. } " { Podophyllin, ¼ gr. }	50 2 25 50 2 25 60 2 75 90 4 25 40 1 75 40 1 75 60 2 25 80 3 75 3 50 17 25 50 2 25 1 00 4 75 40 1 75 40 1 75 80 3 75 90 4 25 80 3 75 50 2 25	
Imbulin, 3 grs. " Magnesia et Rhei, (1 gr. each). Opi. U. S. P. 1 gr. " (Opi. et Camphoræ). " (Opi. et Plum. Acet.). " (Opi. et Plum. Acet.). Podophyllin et Hydrag. { Podophyllin, ¼ gr. } " { Pil. Hydrag. 2 grs. }	40 1 75 40 1 75 80 3 75 90 4 25 80 3 75 50 2 25	

CLEMENT'S

Patent Improved Artificial Legs.



This invention stands approved by *every* Surgeon who has examined it, many of whom, had given testimonials for others, previous to the advent of this before the public.

They contain the requisite combination for the foot, are less complicated, lighter, stronger, more durable, and more perfectly adapted to the wants and comforts of the wearer than any other leg.

They have attained a perfection in their movement, which enables the wearer to walk, not only with ease, but in a graceful and natural manner.

Mr. Clement has had a practical experience, of twenty years, in the business, and during that time, became acquainted with the merits and faults of every kind of artificial limb; and now has combined the best principles of those that had any, with new improvements of his own.

The models which received the "Great Prize Medal" at the World's Exhibition, in London, and most of the others which have been exhibited before scientific bodies in this Country, were made by Mr. Clement.

This limb is pronounced by many of the most eminent Surgeons, as the "best" now made, and is endorsed by the Surgeon General U. S. Army, and adopted for the Army and Navy.

It is approved and recommended by the entire Faculty of Jefferson Medical College, and is the only artificial limb in that Institution.

The attention of Surgeons, Physicians, and all persons interested, is most respectfully solicited. Pamphlets containing information and references concerning this leg, sent free to applicants, by mail or otherwise. Address

RICHARD CLEMENT,
No. 929 Chestnut Street,
Philadelphia.

JOHN C. BAKER & CO.'S COD LIVER OIL.

That the undersigned has devoted more pains, more cost, and a wider range of experiment to the production of COD LIVER OIL, is a fact conceded by the drug trade in general, and the medical faculty in particular.

JOHN C. BAKER & CO.'S COD LIVER OIL.

It is as much a standard preparation in the grand hospitals of Jeddo, Constantinople, Pekin and Canton, as it is in the private practice of physicians in Philadelphia. Having visited every fishery upon the banks, and having brought to bear all the adjuncts of steam processes in its refining, the undersigned may be pardoned if he exults in the legitimate reward of his investigations and his toils—the production of a chemically pure, comparatively tasteless, and almost inodorous oil of *Gadus morrhua*—which, medicinally considered, is the perfection of the article in question. In the process of refinement, the medicinal properties are not dispelled, but rather contracted. The contrary is the case with other brands that have been subjected to chemical analysis.

We have in our possession numerous testimonials to the superiority and efficacy of our OIL from the most distinguished physicians of Philadelphia and elsewhere, which have been published in full. Among these are the names of

Dr. Samuel Jackson, of the University of Pennsylvania; Dr. Joseph Leidy, of the University of Pennsylvania; Dr. Thomas B. Mutter, Dr. William Darraeh, Dr. Lewis D. Harlow, Dr. Thomas H. Yardley, Dr. William Knight, and Dr. J. L. Ludlow.

JOHN C. BAKER & CO.'S COD LIVER OIL

Is sold by respectable Druggists everywhere. The trade is supplied from the manufactory, No. 718 Market street, Philadelphia.

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JOHN C. BAKER, & CO.,
718 Market street.

GEORGE W. CARPENTER, HENSZEY & CO.'S

Wholesale Drug and Chemical Warehouse,

737 MARKET STREET, PHILADELPHIA.

Established 1828.

Importers and Dealers in Foreign and American Drugs, Medicines and Chemicals,

and every article which appertains to the business.

Also, Anatomical Preparations and Wired Skeletons. We continue to prepare all the valuable concentrated Fluid Extracts and preparations originally introduced by our late George W. Carpenter, which have long enjoyed a high reputation, among which are

Carpenter's Comp'd. Fluid Extract of Sarsaparilla.

Carpenter's Comp'd. Fluid Extract of Buchu.

Carpenter's Precipitated Extract of Bark.

Carpenter's Saratoga Powders.

From the long experience and facilities we have in business, purchasers will find it to their advantage to call on us before laying in their supplies.

Orders by mail or otherwise will receive prompt attention,

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JOHN M. MARIS & CO.
WHOLESALE DRUGGISTS.
AND
DRUGGISTS' SUNDRYMEN.
No. 711 MARKET STREET,
Philadelphia.

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VACCINE VIRUS.
FRESH FROM HEALTHY WHITE CHILDREN,
FOR SALE BY
BULLOCK AND ORENSHAW,
ARCH AND SIXTH STREET,
Philadelphia.

Price, \$1.50 per crust.

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Richmond, Va.,

WHOLESALE AND RETAIL DEALERS IN

Pure Drugs, Medicines, Paints, Oils, Varnishes, Alcohol,
BRUSHES, KEROSENE OIL, DYE STUFFS, PUTTY, ROSIN, WINDOW GLASS, PERFUMERY,
SOAPS, SPICES, TURPENTINE, SURGICAL INSTRUMENTS, TRUSSES,
CHEMICALS, SUPPORTERS, BANDAGES,

AND ALL

NEW PHARMACEUTICAL PREPARATIONS,

All of which they offer as low as they can be purchased anywhere
in the market. jan. 1866—1y

ROBERT SHOEMAKER AND CO.,
WHOLESALE DRUGGISTS.
No. 201 AND 203 NORTH 4TH STREET, CORNER OF RACE STREET,
PHILADELPHIA.

Importers, Dealers and Manufacturers of Fine Drugs, Chemicals,
Pharmaceutical Preparations, Druggist's Shop Furniture, Per-
fumery, &c. Also; Manufactures White Lead, and Zinc Paints.

The attention of the trade is particularly called to our extensive
Stock.

ROBERT SHOEMAKER.

WM. M. SHOEMAKER.

RICHARD M. SHOEMAKER.

my 1866—1y

PALMER'S PATENT ARTIFICIAL ARM AND LEG.

These celebrated artificial limbs, which, before the war, enjoyed so large a Southern patronage, are again brought to the attention of the Medical Faculty and people of the South by the original inventor.

They have been nearly twenty years before the public, and have secured, both in this country and in Europe, the unqualified endorsement of the most distinguished surgeons of the world, more than a hundred of whom have given public testimony in their favor.

The *Société de Chirurgie* of Paris, perhaps the first surgical tribunal of the world, after twelve years investigation, pronounced decidedly in favor of the unquestioned superiority of the PALMER LEG.

Fifty Gold and Silver Medals (or "first prizes"), including the Great Medals of the World's Exhibition in London and New York, awarded to Dr. Palmer for the Best Patent Limbs.

Among American surgeons, who have publicly pronounced in favor of these limbs as the best, may be named Drs. MOTT, PARKER, CARNOCHAN, VAN BUREN, GROSS, POPE, MÜTTER, PANCOAST, WARREN, TOWNSEND, BIGLOW, N. R. SMITH, MILLER, JOHNSON, and many others.

DR. PALMER, directs the manufacture of his Patent Leg and Arm, aided by men of the best qualifications and greatest experience. He is specially commissioned by the Government, and has the patronage of the prominent Officers of the Army and Navy. Six Major-Generals, and more than a thousand less distinguished officers and soldiers, have worn the PALMER LIMBS on active duty, while still greater numbers of eminent civilians are by their aid filling important positions, and effectually conceal their misfortune.

PALMER'S RULES FOR AMPUTATION, so favorably received by the Profession, have been revised, and now embody the results of years of added experience, and especially of that derived from thousands of cases treated during the late war.

Pamphlets containing full information concerning these limbs, and the "Rules for Amputation," also the Report of the "*Société de Chirurgie*," will be sent to any address on request.

To avoid fraudulent imitations, (many of which are now offered to the Public,) apply only to the inventor.

DR. B. FRANK PALMER,

mh. 1866—1y

1609 Chestnut Street, Philadelphia.

Pharmaceutic Granules and Dragees,

(SUGAR-COATED PILLS.)

—OF—

G A R N I E R, L A M O U R E U X & C O.,

Members of the College of Pharmacy, of Paris.

These Granules and Dragees are recognized, both in Europe and in the United States, as the most reliable way of dispensing valuable medicines. Physicians will find many worthless imitations, and they must be careful to see that the Pills dispensed by the Druggists are made by MESSRS. GARNIER, LAMOUREUX & Co., Members of the College of Pharmacy, Paris. The following are some of the principal preparations :

DRAGEES.

	U. S. P.		U. S. P.
Aloes and Myrrh.....	4 grains.	Cynoglossae.....	1 grain.
Compound Cathartic.....	3 "	Quercine's Iron, reduced by Hydrogen.....	1 "
".....	1½ "	Pot. Iodide of Iron.....	1 "
Aloetic.....	4 "	Lactate of Iron.....	1 "
Asafoetida.....	4 "	Sulphate of Quinine.....	1 and 2 "
Aloes and Asafoetida.....	4 "	Valerianate of Quinine.....	1 "
Dinner, Lady Webster's.....	3 "	" Zinc.....	1 "
Comp. Calomel, Plummer's.....	3 "	" Iron.....	1 "
Blue Pills.....	3 "	Citrate of Iron and Quinine.....	2 "
Opium Pills.....	1 "	" ".....	2 "
Calomel Pills.....	2 "	Willow Charcoal.....	2 "
Opium Elect. Plumb. each.....	1 "	Dia-cordium.....	2 "
Extract of Rhatany.....	2 "	Anderson's Anti-Bilious and Purgative.....	2 "
Compound Rhubarb.....	3 "	Extract of Gentian.....	2 "
Compound Colocynth.....	3 "	Iodide of Potassium.....	2 "
Compound Scquills.....	4 "	Calcined Magnesia.....	2 "
Dover's Powders.....	3 "	Rhubarb.....	2 "
Carbonate of Iron, Vallet's formula.....		Ergot, powder covered with sugar as soon as pulverized.....	2 "
Carbonate of Manganese and Iron.....	1-5 "	Phellandria Seed.....	2 "
Kermes.....	1-5 "	Washed Sulphur.....	2 "
Santonine.....	½ "	Sub-Nitrate of Bismuth.....	2 "
Bi-Carbonate of Soda.....	4 "	Tartrate of Potassa and Iron.....	2 "
Magnesia and Rhubarb, each.....	1 "		
Meglin.....	1 "		

GRANULES.

Of 1-50 of a grain each.		Valerianate of Atropine, Veratrine.	
Aconitine,	Atropine,	Morphine,	Strychnine,
Arsenious Acid,	Digitaline,		
Of 1-5 of a grain each.		Extract of Opium, Proto-Iodide of Mercury.	
Tartar Emetic,	Conicine,	Extract of Hyosclamus,	
Cocaine,	Extract of Belladonna,	Extract of Ipecac,	
Lupuline.....	½ grain.	Extract Rad. Aconite.....	½ grain.
Extract Nux Vomica.....	½ "	Emetide.....	½ "
Veratrine.....	1-24 "	Iodide of Mercury.....	½ "
Sulphate of Morphine.....	½ "	Valerianate Morphine.....	½ "
Corrosive Sublimate.....	1-12 "	Acetate Morphine.....	½ "
Nitrate of Silver.....	½ "	Digitaline.....	1-24 "
Extract of Hyosclamus.....	½ "	Strychnine.....	1-12 "

Colchicum, (each granule equal to two drops of tincture.)

DRAGEES.

Copaiba, pure solidified,	Copaiba, Cubebs and Citrate Iron,	Cubebs and Alum,
Copaiba and Cubebs,	Cubebs, pure,	Cubebs, Rhatany and Iron.

✚ To be had at the principal Druggists.

F. A. REICHARD, Sole Agent for United States,

Jan. 1866—6m

150 William street, between Fulton and Ann sts., New York.

DR. McMUNN'S ELIXIR OF OPIUM.

THIS IS THE PURE AND ESSENTIAL EXTRACT FROM THE NATIVE DRUG.

It contains all the valuable medicinal properties of Opium in natural combination, to the exclusion of all its noxious, deleterious and useless principles upon which its bad effects depend. It possesses all the sedative, anodyne and antispasmodic powers of Opium.

To produce sleep and composure.
To relieve pain and irritation, nervous excitement, and morbid irritability of the body and mind.
To allay convulsive and spasmodic actions, etc., etc.
And being purified from all the noxious and deleterious elements, its operation is attended by
No sickness of the stomach, no vomiting, no costiveness, no headache,
Nor any derangement of the constitution or general health.
Hence its high superiority over Laudanum, Paregoric, Black Drop, Denarcotized Laudanum, and every other Opiate preparation.

The Elixir of Opium is also greatly superior to Morphine.

Its containing all the active medicinal virtues of Opium, in native combination, and in its full representative, while Morphine, being only one of its principles, cannot alone, and in an artificial state of combination too, produce all the characteristic effects of so triumphant a remedy, when four or five of its other valuable principles are excluded.
Its effects the Elixir is more characteristic, permanent and uniform than any of the artificial blends of Morphine.
And as a preparation, it is not liable to decompose or deteriorate, like the solutions of Morphine, and thus is obviated a serious objection, which has prevented the latter from being used with precision and effect.
I speak summarily, the Elixir of Opium, as a remedy, may be adopted in all cases in which Opium or its preparations are administered, with a certainty of obtaining all the salutary and happy effects, without being followed with their distressing and pernicious consequences.

TESTIMONIALS.

FROM DR. CHILTON, THE EMINENT CHEMIST OF NEW YORK, IN PROOF OF THE ACCOMPLISHMENT OF THIS DISCOVERY.

DR. JOHN B. McMUNN having made known to me the process by which he prepares his ELIXIR OF OPIUM, and wishing me to state my opinion concerning it, I therefore say that the process is in accordance with well known chemical laws, and that the preparation must contain all the valuable principles of Opium, without those which are considered as deleterious and useless.
NEW YORK, December 23th, 1836. J. R. CHILTON, M. D., Operative Chemist, etc.

FROM DR. JAMES HERON, PRESIDENT OF THE MEDICAL SOCIETY OF ORANGE COUNTY, NEW YORK, OF WHICH DR. McMUNN IS A MEMBER.

This certifies that I have used Dr. McMUNN'S ELIXIR OF OPIUM, and do find it to be preferable to Opium and its tinctures, in that it is not followed by the pain in the head, nausea, dry and bitter mouth and constipation, so generally consequent upon the use of that drug. And I do believe this preparation at least equally beneficial with the other combinations of Morphia.
WARWICK, October 17th, 1849. JAMES HERON, Physician and Surgeon.

DRS. VAN HOEVENBERGH AND ALLEN'S TRIALS OF THE ELIXIR OF OPIUM IN THE BELLEVUE HOSPITAL.

This is to certify that Dr. J. B. McMUNN'S ELIXIR OF OPIUM has been used in several cases, at the Bellevue Hospital, with the most satisfactory effects, when the usual preparations of Opium have proved injurious.

The undersigned are fully convinced that it possesses the sedative properties of the latter, without producing constipation of the bowels, or any unpleasant symptoms.

HENRY VAN HOEVENBERGH, Resident Physician, Bellevue Hospital,
GEORGE F. ALLEN, Assistant Physician.

BELLEVUE, NEW YORK, February 19th, 1837.

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Asclepin,	Eupatorin, }	Menisperm.,	Xanthoxylin.
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Caulophyllin,	Gelsemin,	Podophyllin,	Comp. Podophyllin Pills
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Chimaphillin,	Hamamelin,	Rhein,	" Erigeron,
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Colocynthin,	Hydrastin,	Rumin,	" Stillingia,
Cornin,	Hyoscyamin,	Sanguinarin,	" Solidago,
Corydalin,	Irisin,	Scutellarin,	" Xanthoxylum,
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Asclepias Tuberosa,	Gelsemium Semperr,	Scutellaria Lateriflora,
Baptisia Tinctoria,	Humulus Lupulus,	Senecio Gracilis,
Barosma Crenata,	Hyoscyamus Niger,	Smilax Saraparrilla,
Cannabis Indica,	Hydrastis Canadensis,	Stillingia Sylvatica,
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Cornus Florida,	Ipomœa Jalapa,	Veratrum Viride,
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~~See~~ A Descriptive Pamphlet, with references and engravings of the Artificial Limbs, and also Monograph on "Esections of the Arm and Forearm," etc., will be sent to any address.

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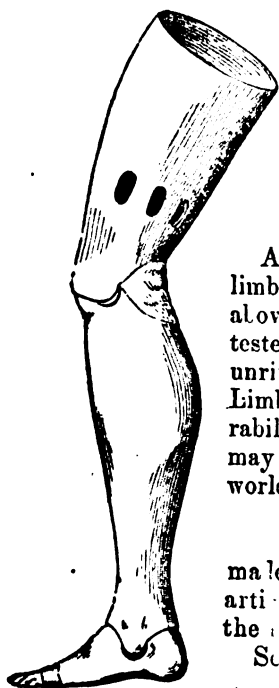
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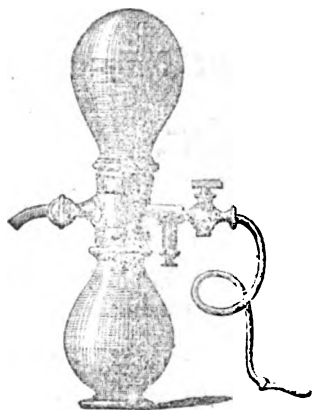
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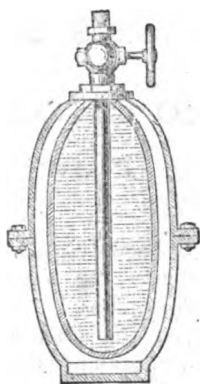
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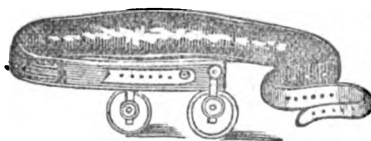
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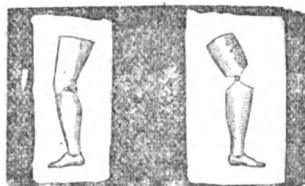
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